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Improving U.S.-Russian Nuclear Cooperation

Joint efforts to improve nuclear security are endangered by other political disputes. We must maintain the pace of progress.

Anticipating that nuclear proliferation problems might erupt from the disintegration of the Soviet Union a decade ago, the United States created a security agenda for working jointly with Russia to reduce the threat posed by the legacy of the Soviet nuclear arsenal. These cooperative efforts have had considerable success. Yet today, the administrations of both President George W. Bush and Russian President Vladimir Putin are neglecting the importance of current nuclear security cooperation.

If these programs fall victim to that neglect or become a casualty of renewed U.S.-Russian tensions over the proposed deployment of a widespread U.S. ballistic missile defense system and the future of the Anti-Ballistic Missile (ABM) Treaty, then international security will be imperiled. There is no value in renewed animosity between the world's top nuclear powers, especially if it helps push nuclear weapons materials and scientists to other nations or terrorist groups that desire to develop or expand their own weapons capabilities. Both nations need to take action, individually and jointly, to continue and in some cases expand the programs underway, as well as to develop new programs to address emerging problems. Vast amounts of nuclear, chemical, and biological weapons materials have yet to be secured or eliminated; export and border controls are grossly inadequate; and Russian weapons facilities remain dangerously oversized, and their scientists often lack sufficient alternative work. The need to aggressively address these threats is at least equal in importance to the need to counter the dangers posed by ballistic missile proliferation.

In bipartisan action in 1991, Congress laid the foundation for the cooperative security agenda by enacting what became known as the Nunn-Lugar program, named for its primary co-sponsors, Senators Sam Nunn (D-Ga.) and Richard Lugar (R-Ind.). This initiative has since developed into a broad set of programs that involve a number of U.S. agencies, primarily the Departments of Defense, Energy, and State. The government now provides these programs with approximately \$900 million to \$1 billion per year, and the results are tangible.

The first success came in 1992, when Ukraine, Belarus, and Kazakhstan agreed to return to Russia the nuclear weapons they had inherited from the Soviet breakup and to accede to the Nuclear Nonproliferation Treaty as nonnuclear weapon states. The same year, the United States helped Russia establish several science centers designed to provide alternative employment for scientists and technicians who had lost their jobs, and in some cases had become economically desperate, as weapons work in Russia was significantly reduced.

In 1993, the United States and Russia signed the Highly Enriched Uranium Purchase agreement, under which the United States would buy 500 metric tons of weapons-grade highly enriched uranium that would be "blended down" or mixed with natural uranium to eliminate its weapons capability and be used as commercial reactor fuel. The two nations also established the Material Protection, Control, and Accounting program, a major effort to improve the security of Russia's fissile material, and they signed an accord to build a secure storage facility for fissile materials in Russia.

In 1994, U.S. and Russian laboratories began working directly with each other to improve the security of weapons-grade nuclear materials, and the two countries reached an agreement to help Russia halt weapons-grade plutonium production. Assistance to the Russian scientific community also expanded, with weapons scientists and technicians being invited to participate in the Initiatives for Proliferation Prevention program, which is focused on the commercialization of nonweapons technology projects.

In 1995, the first shipments of Russian highly enriched uranium began arriving in the United States.

In 1996, the last nuclear warheads from the former Soviet republics were returned to Russia. In the United States, Congress passed the Nunn-Lugar-Domenici legislation, which expanded the original cooperative initiative and sought to improve the U.S. domestic response to threats posed by weapons of mass destruction that could be used on American soil.

In 1997, the United States and Russia agreed to revise their original plutonium production reactor agreement to facilitate the end of plutonium production.

In 1998, the two nations created the Nuclear Cities Initiative, a program aimed at helping Russia shrink its massively oversized nuclear weapons complex and create alternative employment for unneeded weapons scientists and technicians.

In 1999, the Clinton administration unveiled the Expanded Threat Reduction Initiative, which requested expanded funding and extension of the life spans of many of the existing cooperative security programs. The United States and Russia joined to extend the Cooperative Threat Reduction agreement, which covers the operation of Department of Defense (DOD) activities such as strategic arms elimination and warhead security.

In 2000, the United States and Russia signed a plutonium disposition agreement providing for the elimination of 34 tons of excess weapons-grade plutonium by each country.

These and other efforts have produced significant, and quantifiable, results, which are all the more remarkable because they have been achieved under often difficult circumstances, as ministries and institutes that only a decade ago were enemies have been required to cooperate. In Russia, more than 5,550 nuclear warheads have been removed from deployment; more than 375 missile silos have been destroyed; and more than 1,100 ballistic missiles, cruise missiles, submarines, and strategic bombers have been eliminated. The transportation of nuclear weapons has been made more secure, through the provision of security upgrade kits for rail cars, secure blankets, and special secure containers. Storage of these weapons is being upgraded at 123 sites, through the employment of security fencing and sensor systems, and computers have been provided in an effort to foster the creation of improved warhead control and accounting systems.

With construction of the Mayak Fissile Material Storage Facility, the nuclear components from more than 12,500 dismantled nuclear weapons will be safely stored in coming years. Security upgrades also are underway to improve the security of the roughly 600 metric tons of plutonium and highly enriched uranium that exist outside of weapons located primarily within Russia, and improvements have been completed at all facilities containing weapon usable nuclear material outside of Russia. Through the Highly Enriched Uranium Purchase Agreement, 122 metric tons of material, which was recovered from the equivalent of approximately 4,884 dismantled nuclear warheads, has been eliminated. Plus, on the human side of the equation, almost 40,000 weapons scientists in Russia and other nations formed from the Soviet breakup have been given support to pursue peaceful research or commercial projects.

Beyond yielding such statistical rewards, these cooperative programs also have created an important new thread in the fabric of U.S.-Russian relations, one that has proven to be quite important during times of tension. Indeed, the sheer magnitude of the cooperative effort and the constant interaction among U.S. and Russian officials, military officers, and scientists has created a relationship of trust not thought possible during the Cold War. These relationships are an intangible benefit that is hard to quantify in official reports, but they are a unique result of this work. Until now, no crisis in U.S.-Russian relations has significantly derailed the cooperative security agenda. Even the damaging rift between the countries that developed as a result of the bombing of Kosovo only slowed or temporarily halted some low-level projects on the Russian side, but it did not result in the elimination of any of them.

Problems persist

Despite such accomplishments, however, some of the programs face significant problems. Milestones have been missed. Promises have been made but not kept. The political atmosphere on both sides is less friendly now than when the programs began. And in some quarters of the Bush administration, questions are being raised about the enduring importance of this cooperation. For progress to continue, two critical problem areas need to be addressed: access by each nation to the other's sensitive facilities, and Russia's current cooperation with Iran.

Access and reciprocity. Since the beginning of the cooperative agenda, the United States has insisted on having greater access to Russian facilities, arguing that the United States needs to make sure that its funds are being spent appropriately. For example, DOD's Cooperative Threat Reduction program requires regular audits and inspections by U.S. officials, and the Department of Energy's (DOE's) programs make use of less formal but still fairly stringent standards for inspection. In recent years, however, many clashes over access have occurred, and rigidity has replaced flexibility. Spurred by congressional requirements and bureaucratic frustration, the United States has hardened its demands for access. Russia has resisted, arguing that U.S. intrusion could compromise classified information and facilitate spying, and that Russian specialists already have less access to U.S. facilities than U.S. specialists do to Russia's facilities.

The administrations of both President George W. Bush and Russian President Vladimir Putin are neglecting the importance of current nuclear security cooperation.

This tug-of-war has become a major bone of contention that has interfered with some cooperation and fed the political mistrust and resentment that still remains as an undercurrent of U.S.-Russian relations. Clearly, some balance on this issue must be found. The United States rightly desires to be assured that its funds are being used properly, and Russia has legitimate security concerns. But continuing the impasse will become destructive to the interests of both sides. Unfortunately, it is not clear that the issue is being adequately addressed. In many cases, individual programs are left free to define their own access requirements and pursue their own access methods and rules. The issue of access may need to be addressed at a higher political level and with more cohesiveness than has been exercised in the past.

Russia's cooperation with Iran. The trigger for this disagreement was Russia's decision in 1995 to help Iran complete a 1,000-megawatt light water reactor in the port city of Bushehr, and controversies between Russia and the United States over this arrangement have only grown sharper over the years. U.S. officials maintain that the process of building the plant is aiding Iran's nuclear weapon ambitions. Russia denies this accusation and claims that its actions are consistent with the Nuclear Nonproliferation Treaty, which allows the sharing of civilian nuclear technologies among signatories. This fight has resulted in an informal stalemate under which Russia continues to work to rebuild the Iranian nuclear plant while agreeing to limit other nuclear cooperation. However, there have been problems with this uneasy truce, including charges by the United States that Russia is cooperating in other illicit nuclear exchanges and U.S. concerns about planned Russian transfers of sensitive technology and increased sales of conventional weapons. Resolving these issues in a way that satisfies both U.S. and Russian political and economic needs will be extremely difficult.

The new administration

When the Bush administration came to office, many observers expected that there would be significant support for nuclear security cooperation programs. During the election campaign, the president and his advisers made a number of positive statements on the subject, and pledged to increase spending on key programs. But the reality of the administration's governance has not matched its campaign rhetoric. Indeed, in one of its first acts, the administration proposed significant cuts in several of the cooperative programs. Thus far, Congress, working with bipartisan support, is resisting many of the proposed reductions.

Some of the administration's largest proposed cuts would hit some of the most important programs. For example, the program to ensure that Russia's weapons-grade fissile material and some portion of its warheads are adequately protected is cut by almost 20 percent, even though this effort is already behind schedule. Another set of programs hit by cuts include those to eliminate equal amounts of the excess U.S. and Russian stockpiles of plutonium. These programs focus on the use of two types of technologies: one for immobilizing the plutonium in a radioactive mixture and the other for mixing the plutonium with uranium to create a mixed-oxide fuel that can be used in commercial power reactors. The goal of both approaches is to create a radioactive barrier around the plutonium that makes it extremely difficult to retrieve for use in weapons. The proposed budget significantly decreases funding for disposal of Russian plutonium. And although the budget slightly increases overall funding for the disposition of U.S. plutonium, it raises questions about the administration's willingness to support both types of technologies, as it drastically cuts support for activities based on immobilization. Yet at the same time, administration officials have raised questions about the cost of the mixed-oxide fuel option. As a result, the program now remains in limbo, and the administration apparently has not decided how to proceed.

Perhaps even more difficult to understand, the budget eliminates a \$500,000 effort to provide Russia with incentives to publish a comprehensive inventory of its weapons-grade plutonium holdings. Without knowing how much plutonium Russia has, it is impossible to know how much excess must ultimately be eliminated. The United States has published its plutonium inventory, and it should be encouraging Russia to do the same.

The budget also decimates the already relatively small Nuclear Cities Initiative. Certainly, this program to help Russia shrink its massively oversized nuclear weapons complex and create jobs for unneeded weapons scientists and workers has suffered problems, in part because its mission is difficult and in part because its strategy has been flawed. But simply eliminating the program would leave an important national security objective inadequately funded. Such a step also would jeopardize European contributions to the downsizing process--contributions that only recently have begun to materialize. Even the U.S. General Accounting Office, which has criticized some aspects of the program, declared in a report released in spring 2001 that the program's goals are in U.S. national security interests.

After the administration proposed its budget cuts, it then doubled back and launched a review of the cooperative security agenda. This was a prudent, if poorly prioritized step: It is proper for a new administration to want to be sure that federal programs are meeting national security needs. In fact, many observers had urged the Clinton administration to perform a comprehensive review of U.S.-Russian nuclear security programs, but to no avail.

Unfortunately, the complete results of this review are not known publicly. No final report has been issued, and administration officials have stated that no final decisions have been made. Through a few briefings on a draft report, officials have revealed that, at least preliminarily, the review endorsed many of the current programs. This is welcome news. But it remains unclear how the scope and pace of many future activities may be affected by the review's outcome.

The draft review does call for significant restructuring in at least two areas. One recommendation would virtually eliminate the Nuclear Cities Initiative, as called for in the administration's proposed budget. Successful projects conducted through the initiative would be merged with other programs. Congress is opposing such a move, however, and the administration has offered no other proposals on how to facilitate the downsizing of the Russian nuclear weapons complex in the absence of this program.

Another recommendation calls for restructuring the plutonium disposition programs, citing, in part, the administration's concerns about cost. The price tags of these programs have inflated significantly. The Russian component is now estimated at more than \$2 billion, and the U.S. component at approximately \$6 billion--a roughly a 50 percent increase over the initial estimates made in 1999 for the U.S. program alone. One way that the administration is considering to reduce the spiraling costs is for the United States to design and build new reactors that can burn unadulterated plutonium and provide electricity. The implication is that this would help achieve national security goals and national energy objectives simultaneously. But if not done carefully, such R&D could violate U.S. nonproliferation policy. It also should be noted that a number of studies, by the National Academy of Sciences and by a joint U.S.-Russian team of experts, among others, have concluded that the immobilization and mixed-oxide fuel options are the most feasible and cost-effective methods for disposing of plutonium. It is not clear whether returning to restudy new options will facilitate the real security objective of the program, which is to eliminate plutonium as a proliferation threat as rapidly as possible.

Additional funding could help Russia to improve its ability to detect nuclear materials at ports, airports, and border crossings.

Continued investment

Too much is at stake to allow the cooperative security programs to crumble in order to save a few hundred million dollars or even a few billion dollars, especially in the new environment in which billions of dollars will be spent to eliminate and thwart terrorist threats. Current spending on cooperative security is one-tenth of 1 percent of current defense spending in the United States. It is an affordable national security priority. What cannot be afforded is the destruction of programs and relationships that have taken years to nurture and that provide value to both sides. The U.S. approach should be to consolidate the successes, adopt new strategies for overcoming problems, and identify new solutions to enduring or new threats.

What is required is the creation of a policy for sustainable cooperation with Russia on nuclear security issues. Elements of such a policy include:

Engaging with Russia as a partner. The cooperative security work that occurs requires the involvement and acquiescence of both the United States and Russia. In recent years, Russian input into this process has been diminished, and problems have resulted from this disparity. On one level, there is the enduring dispute about how much of the cooperative security budget is spent in Russia versus in the United States. But there are other, perhaps more important, issues. There is the tendency of some U.S. officials to treat collaboration with Russia as a client-donor relationship, with Russia acting as a subcontractor to the United States rather than as a partner. This tendency has caused resentment and limited cooperation on the Russian side. Another issue is the Russian desire to modify the rationale for U.S.-Russian cooperation. Russia often bristles about being treated as a weapons proliferation threat, even though its own officials acknowledge their nation's proliferation problems. Russia would prefer to cooperate with the United States in a more equal manner, as a scientific and security partner rather than as a potential proliferant.

Such a shift may not occur rapidly, but the goal has merit. Proliferation problems in Russia have been reduced during the past decade, and there is a long-term need to engage with all elements of Russian society during its continuing political transition. To achieve sustainable engagement in the weapons area, future cooperation will need to serve larger U.S. and Russian interests. One key step in this direction would be to integrate Russian experts into all phases of program design and implementation. Taking this step will require a considerable change of attitude in the United States, both in the executive branch and in Congress. It will also require a sea change of mentality in Russia. Russian officials must demonstrate that they are committed to nuclear security cooperation beyond the financial incentives for participation offered by the United States. Achieving real balance and partnership will be difficult, but it is possible with strong political leadership.

Raising the political profile and leadership. The significant expansion of the cooperative security agenda and the progress that has been made on it have been substantially facilitated by political relationships and leadership in the United States and Russia. In times when this political leadership has been lacking on one or both sides, progress has lagged and problems have festered. At present, political leadership on this agenda is lacking in both countries. This agenda needs to be carried out on multiple levels, and its technical implementation is essential. But for success to continue, there must be active political engagement at the White House, Cabinet, and sub-Cabinet political appointee levels in the U.S. government. Similar engagement must also occur in Russia. At a time when they are playing a weak hand on the future of the ABM Treaty, the Russians also have failed to push this agenda forward as a foundation for future cooperation, perhaps because it focuses primarily on shoring up areas of that nation's weakness.

Identifying a strategic plan of action and appointing a leader. The Bush administration's review of U.S.-Russian cooperative programs did not include a strategic review of how all the programs from multiple agencies can or should fit together from the policy perspective of the United States. Such a review is still needed, so that the president's strategy for the implementation, harmonization, and leadership of these programs can be made clear in a public manner. In addition, there should be a joint U.S.-Russian strategic plan for how to achieve important and common objectives on an expedited basis. This would provide a roadmap of project prioritization and agreed-upon milestones for implementation. A precedent for this joint plan can be found in the joint technical program plans for improving nuclear material security that were developed in the early 1990s by U.S. and Russian nuclear laboratories.

There was a time when programs needed to be allowed to grow independently in order to facilitate progress, but the artificial separation between these programs now needs to be ended. In the United States, all of these efforts should be guided by a new Presidential Decision Directive that can bring order and facilitate progress. Congress desires a more cohesive explanation of how all the pieces fit together, and there are synergies among the programs that are being missed because of the separation. It is not necessary to consolidate all of the activities in one or two agencies. What is more important is that the work takes place as part of a cohesive and integrated security strategy with strong and enlightened high-level leadership in both countries.

Also, in the past, many programs have benefited from the involvement of outside experts in the review of programmatic successes, failures, and implementation strategies. The establishment of an outside advisory board for cooperative nuclear security would be very useful if it were structured to allow for interaction with individual programs and had the ability to report to the presidents of both nations.

Underlying such policy issues, there is a need for additional program funding, which would not only accelerate the progress of current programs but also enable new programs to be created. Some of the key examples of where accelerated or new initiatives could have a significant impact include:

Expanding the Materials Protection, Control, and Accounting program. This is the primary U.S. program to improve the security of Russia's fissile material and to work with the Russian Navy to protect its nuclear fuel and nuclear warheads. Activities that could be implemented or speeded up include improving the long-term sustainability of the technical and logistical upgrades that are being made, accelerating the consolidation of fissile material to reduce the number of vulnerable storage facilities, and initiating performance testing of the upgrades to judge their effectiveness against a variety of threat scenarios.

Improving border and export controls. These programs render assistance to Russian customs and border patrol services, but they are fairly limited in scope. Additional funding could help Russia to improve its ability to detect nuclear materials at ports, airports, and border crossings, as well as to establish the necessary legal and regulatory framework for an effective nonproliferation export control system.

Accelerating the downsizing of the Russian nuclear complex and preventing proliferation via brain drain of its scientists. These programs now primarily fund basic science or projects that have some commercial potential. However, there are many other real-world problems that Russian weapons scientists could turn their attention to if sufficient funds and direction were provided. These include research on new energy technologies, development of environmental cleanup methods, and nonproliferation analysis and technology development.

Expediting fissile material disposition and elimination. Although programs that support the disposal of excess fissile materials in the United States and Russia have shown progress, there is room, and need, for improvement. The Highly Enriched Uranium Purchase agreement could be expanded to handle more than the current allotment of 500 metric tons. The plutonium disposition program, now in political limbo, could be put back on track so that implementation can proceed as scheduled. In addition, the United States and Russia should begin to determine how much more plutonium is excess and could be eliminated.

Ending plutonium production in Russia. Continuing plutonium production for both military and commercial purposes adds to the already significant burden of improving nuclear material security in Russia. Steps should be taken to end this production expeditiously. Russia has three remaining plutonium-producing reactors, which currently produce approximately 1.5 metric tons of weapons-grade plutonium per year. However, the reactors also provide heat and energy for surrounding towns, and in order to shut them down, other energy sources must be provided. In 2000, Congress prohibited the use of funds to build alternative fossil-fuel energy plants at these sites, the method preferred by both Russia and the United States for replacing the nuclear plants. The estimated cost of the new plants is on the order of \$420 million. Congress should lift its prohibition and provide funding for building the replacement plants. Also, Congress should provide funds to enable the United States and Russia to continue their work on an inventory of Russia's plutonium production. Finally, Congress should authorize and fund incentives to help end plutonium reprocessing in Russia. In 2000, program officials requested about \$50 million for a set of projects to provide Russia with an incentive to end its continued separation of plutonium from spent fuel. But Congress approved only \$23 million, and the Bush administration's proposed budget eliminated all funding. These programs should be reconstituted.

There is no question that U.S.-Russian nuclear relations need to be adapted to the 21st century. The foundation for this transition has been laid by the endurance and successes of the cooperative security agenda. Today, each country knows much more about the operation of the other's weapons facilities. Technical experts cooperate on topics that were once taboo. And the most secretive weapons scientists in both nations have become collaborators on efforts to protect international security. Both nations must now recognize that more progress is needed and that it can be built on this foundation of achievement--if, in fact, elimination of the last vestiges of Cold War nuclear competition and the development of effective cooperation in fighting future threats is what the United States and Russia truly seek.

Recommended reading

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