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Center for Preventive Action

Council Special Report No. 57
November 2010

Micah Zenko

Toward Deeper Reductions in U.S. and Russian Nuclear Weapons

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Foreword

The New START Treaty, signed by presidents Barack Obama and Dmitry Medvedev in April 2010, was an important achievement. It committed both countries to substantial reductions in their nuclear arsenals. Both countries are now limited to 1,550 deployed strategic nuclear warheads—far below the Cold War peak of 31,000 in the United States alone. Moreover, the treaty is just one of several recent examples of U.S.-Russia collaboration on nuclear issues. In just the past two years, the former adversaries also finalized an agreement on plutonium disposal and imposed UN sanctions against Iran in reaction to its nuclear program.

Despite these signs of progress, it is unwise to be complacent. Even after the implementation of the New START Treaty, the United States and Russia will command enough nuclear weapons to annihilate each other several times over. In this Council Special Report, Fellow for Conflict Prevention Micah Zenko argues that reducing nuclear weapons stockpiles even further—to one thousand warheads—would be both strategically and politically advantageous. It would decrease the risk of nuclear weapons theft and nuclear attack and increase international political support for future U.S. initiatives to reduce or control nuclear warheads, all while maintaining a credible nuclear deterrent.

To achieve such a significant reduction, the United States and Russia would need to reach agreement on three long-standing and contentious issues. Tactical nuclear weapons deployments will be the most difficult of these challenges, Zenko writes, since Russia has a much larger arsenal of these weapons than does the United States and will therefore take the brunt of the cuts. Missile defense is the second obstacle toward further significant nuclear reductions. Much work remains to secure Moscow's cooperation on—or acceptance of—the project. Finally, the United States and Russia must reach a verifiable agreement on the use

of nuclear vehicles for conventional weapons delivery. It is difficult to overstate the potential danger if either country mistook a conventional missile for a nuclear one.

Toward Deeper Reductions in U.S. and Russian Nuclear Weapons makes a thoughtful contribution to the discussion on how to build a stable future with far fewer nuclear weapons. As the Senate begins its consideration of the New START Treaty, this CSR serves as a reminder that there is more work to be done.

Richard N. Haass

President

Council on Foreign Relations

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Micah Zenko

Council Special Report

Introduction

President Barack Obama has made reductions in the United States' nuclear arsenal and a decreased reliance on nuclear weapons major foreign policy priorities for his administration. The New Strategic Arms Reduction Treaty (New START), signed in April 2010 by President Obama and Russia's president, Dmitry Medvedev, represents concrete movement toward these goals—goals that both presidents share. This follow-on accord to the 1991 START Treaty limits the United States and Russia to 1,550 deployed strategic nuclear and conventional warheads, 800 strategic launchers, and 700 deployed strategic missiles and bombers. Yet while the New START Treaty represents a substantial decrease from Cold War levels, the United States will retain around 2,000 deployed strategic and tactical nuclear weapons and Russia will maintain approximately 3,500 deployed strategic and tactical nuclear weapons—which together will constitute over 90 percent of the world's nuclear weapons.

To achieve additional nuclear weapons reductions, the United States and Russia should pursue deeper cuts through a verifiable and legally binding bilateral treaty limiting each country to no more than one thousand operationally deployed nuclear weapons, including tactical nuclear weapons, which Washington and Moscow have not formally addressed since the 1987 Intermediate-Range Nuclear Forces Treaty.¹ By counting both strategic and tactical nuclear weapons, which no prior U.S.-Russia arms control agreement has done, this treaty would open a new chapter of arms control negotiations. Moreover, the overall reductions it would require surpass New START's 30 percent decrease from the warhead limit in the 2002 Strategic Offensive Reductions Treaty (SORT), which had a ceiling of 2,200 deployed strategic warheads. Hence, capping both countries' arsenals at one thousand deployed weapons would cut the United States' deployed arsenal in half and reduce Russia's by more than two-thirds.

A bilateral treaty between the United States and Russia would serve U.S. national interests in a number of ways:

- It would allow the United States to fulfill its security commitments by maintaining a credible nuclear deterrent that extends to allies and partners via the “nuclear triad” of land-, sea-, and air-based delivery vehicles.
- It would provide the current or future administrations political leverage and flexibility to seek additional verifiable reductions with Russia and initiate a series of multilateral agreements that include the participation of other nuclear weapon states.
- Deeper cuts in U.S. and Russian nuclear forces would help catalyze broader international support for a range of American nuclear priorities, such as securing all nuclear weapons materials within four years.
- Fewer operational tactical nuclear weapons deployed by the United States and Russia would decrease the likelihood of nuclear terrorism by reducing the total number of such weapons potentially vulnerable to diversion or theft.
- The treaty would also reduce the probability and severity of nuclear attack on the United States and its allies by diminishing the number of nuclear weapons that could target the United States and decreasing the perceived threat from Russian tactical nuclear weapons to U.S. allies.
- The successful negotiation and ratification of an additional bilateral nuclear reduction treaty would reinforce a “reset” of U.S.-Russia relations, which increases the likelihood of Moscow’s cooperation on a broader set of critical U.S. foreign policy priorities.

Future U.S.-Russia nuclear reduction talks, however, face significant challenges. To create the conditions for an agreement, three substantive policy and technical issues must be addressed: tactical nuclear weapons, missile defense, and conventional weapons on nuclear-capable delivery systems. This report assesses these interrelated challenges and offers practical recommendations for surmounting them. It does not detail the specific provisions for a bilateral treaty, such as the types of permitted warheads, delivery vehicles, or inactive stockpiles.

Moving Toward One Thousand

For the reasons enumerated, the United States should pursue the deepest nuclear reductions possible while maintaining deterrence and political feasibility. A bilateral treaty limiting the United States and Russia to one thousand operationally deployed nuclear weapons achieves both objectives. (In this report, *weapons* and *warheads* are used interchangeably.)² An arsenal of one thousand nuclear weapons is more than sufficient to allow the U.S. military to sustain the nuclear triad to deter any plausible current and future threats, or respond with a devastating retaliation in the case of a nuclear first strike. During the Cold War, experts estimated that that the United States would need no more than five hundred weapons to fight a nuclear war against the Soviet Union.³ While this scenario is highly implausible today, one thousand weapons would ensure that the United States could devastate any potential adversary in a nuclear exchange. Reducing the U.S. nuclear arsenal does not threaten American security because, unlike during the Cold War, when the U.S. nuclear arsenal compensated for conventional shortcomings vis-à-vis the Soviet Union, today the United States retains an overwhelming edge in conventional power-projection capabilities. Moreover, because the treaty would not count inactive stockpiles, it would allow the United States to rapidly build up its operationally deployed nuclear forces should Russia withdraw from extant arms control agreements or China increase its nuclear capabilities to a threatening level. Reducing the U.S. arsenal to one thousand is thus a cautious next step that diminishes the world's largest nuclear stockpiles while preserving strategic stability.

Consequently, both nuclear disarmament advocates and proponents of the continued primacy of nuclear weapons are likely to agree that moving to one thousand serves U.S. national interests. The former will view this treaty as a moderate and necessary bridge for later verifiable reductions by the United States and Russia, as well as a multilateral agreement that requires the participation of other declared nuclear

weapons states; the latter will view the treaty as a strategic move that enhances American security without sacrificing U.S. deterrent capabilities. Conceivably such broad consensus would translate into bipartisan support from civilian and military officials. Indeed, several senior U.S. and Russian officials have already promoted a move toward one thousand, indicating comfort with this number among decision-makers.⁴ The treaty would also balance the positions of allied governments who favor faster movement toward nuclear disarmament against those who maintain that robust U.S. nuclear capabilities are necessary.

Given the size of U.S. and Russian arsenals, Moscow is the only appropriate partner in the move toward one thousand. China, with an estimated 240 nuclear weapons, should not be included in this round of cuts; future negotiations must include Beijing, however.⁵ Unlike other nuclear weapons powers with arsenals in the mid-hundreds (France and the United Kingdom), China is the only other potentially threatening nuclear power—a strategic competitor of both Russia and the United States—whose nuclear and conventional capabilities are quantitatively and qualitatively improving.⁶ While China is currently unwilling to consider any substantive discussions on nuclear weapons issues, Washington and Moscow should initiate a parallel nuclear dialogue with Beijing that lays the foundation for a future trilateral arms control treaty.⁷ Such an agreement must place a ceiling on China's arsenal to prevent it from launching an arms race as the United States and Russia reduce their nuclear weapons stockpiles to the lowest levels since the 1950s.

Nuclear Forces After the New START Treaty

Within seven years after the New START Treaty goes into effect, the United States and Russia must reduce their arsenals to 1,550 deployed nuclear warheads and 700 deployed strategic missiles and bombers. For the United States, these strategic missiles and bombers—defined as long-range delivery vehicles with high-yield weapons—constitute the nuclear triad of long-range bombers, intercontinental ballistic missiles, and nuclear submarines it plans to sustain for the foreseeable future to mitigate unexpected technological failure or geopolitical surprise that could render one leg of the triad vulnerable.⁸ Along with its deployed strategic arsenal, the United States will retain an inactive stockpile of some one to two thousand warheads. The New START Treaty does not include limits on nonstrategic—or tactical—nuclear weapons, and the United States will likely retain tactical arsenals comparable to those today. While Washington and Moscow have yet to agree on a common, technical definition of tactical nuclear weapons, they generally have lower yields, are intended for shorter ranges, and are designed for battlefield use. The United States reportedly has four hundred operationally deployed tactical nuclear weapons and another seven hundred in inactive reserve.⁹ U.S. operational tactical nuclear weapons are maintained at the Seymour Johnson Air Force Base in North Carolina, and at bases in five North Atlantic Treaty Organization (NATO) countries, with inactive reserves at bases in Nevada and New Mexico.¹⁰

It is considerably more difficult to assess the current and future state of Russian nuclear forces. After New START, Russia's arsenal will reportedly contain a strategic nuclear triad comparable to today and an inactive stockpile of several thousand warheads.¹¹ Currently, Russia's tactical nuclear arsenal is estimated to contain two thousand operationally deployed tactical nuclear weapons—some of which may be dedicated to a missile defense system for Moscow—and some thirty-four hundred in inactive reserve.¹² Russia keeps most of its operationally

deployed tactical weapons at nuclear-certified bases near NATO's borders, and its inactive reserves at permanent storage sites in central Russia.¹³ Tactical nuclear weapons at Russia's nuclear-certified bases are believed to be more vulnerable to diversion or theft than those at permanent storage sites.¹⁴ Like the United States, Russia is unlikely to substantially diminish its nonstrategic arsenal absent a negotiated agreement requiring reductions.

Tactical Nuclear Weapons

The most difficult issue that the United States and Russia must address before negotiating deeper nuclear reductions is each country's nonstrategic—or tactical—nuclear weapons. In 1991, presidents George H.W. Bush and Mikhail Gorbachev announced the unilateral and nonbinding Presidential Nuclear Initiatives, which eliminated a range of tactical nuclear weapons and withdrew others from operational deployment for dismantlement or consolidation at permanent nuclear storage sites. This initiative was reaffirmed the following year by presidents Bush and Boris Yeltsin. Later attempts in the 1990s to discuss tactical weapons failed, largely due to resistance from Russia's armed forces. Nevertheless, for a bilateral treaty that limits both countries to one thousand operationally deployed nuclear weapons, most reductions—especially for Russia—will come from tactical weapons. Since Russia maintains a significantly larger tactical arsenal—and places great importance on it for territorial defense—unprecedented transparency and cuts will require greater sacrifices from Moscow.

The primary use of U.S. tactical nuclear weapons is reinforcement of the nuclear umbrella that extends to at least thirty-one allied countries—the twenty-seven other members of NATO, Japan, South Korea, Australia, and possibly Taiwan—as well as other “partner” countries that do not have mutual defense treaties with the United States. NATO benefits from tactical nuclear deterrence through an arrangement whereby U.S. B-61 tactical nuclear warheads are forward-deployed in Europe under American military custody but are on hand for delivery by European or U.S. dual-capable aircraft.¹⁵ As a practical matter, B-61s are a political symbol of America's commitment to defending Europe; as one Pentagon official acknowledged, “There are no war plans in NATO for using [the B-61s].”¹⁶ These warheads are believed to be maintained at air bases in Belgium, Germany, Italy, the Netherlands, and Turkey.¹⁷ Similarly, the United States provides tactical nuclear deterrence to allies and

partners in Asia through tactical nuclear weapons that can be deployed in times of crisis through forward-deploying heavy bombers or dual-capable aircraft to the region. Removing some B-61s from Europe, or having fewer operational tactical nuclear weapons that can be deployed to Asia, would require a credible and adequate substitution of strategic nuclear capabilities, missile defenses, or conventional military power.

Confusion remains about the role and mission of Russia's tactical nuclear arsenal. Many U.S. officials claim that Russia has expanded the potential uses of its tactical arsenal, though this is not apparent from recent official statements or military doctrine.¹⁸ Russia's (unclassified) military doctrine calls for the use of nuclear weapons in response to an attack involving nuclear or weapons of mass destruction (WMD) against Russia or its allies and "in the event of aggression against the Russian Federation involving the use of conventional weapons when the very existence of the state is under threat."¹⁹ This latter option is intended for deterring NATO's vastly superior conventional military power.

Two conditions must be met for Russia to agree to tactical nuclear weapons talks: the first is to negotiate the removal of U.S. tactical nuclear weapons from Europe, which threaten Russia's conventional and nuclear forces; the second is to meet the Russian demand to reopen multilateral discussions on the stalled Adapted Treaty on Conventional Armed Forces in Europe (CFE Treaty), from which Russia suspended its participation in 2007. An updated CFE Treaty would mitigate NATO's conventional predominance in Europe by further reducing offensive conventional weapons systems within an inspection regime that allays Russia's European security concerns. In summer 2010, U.S. officials proposed three basic principles to guide future CFE Treaty discussions: maximum transparency for reporting force levels, military exercises, and military infrastructure plans; reciprocal restraints on conventional forces in the northern and southern "flank" regions; and host nation consent for the stationing of troops and equipment. Administration officials hope to reach consensus on these principles with their Russian counterparts in time for a joint announcement by presidents Obama and Medvedev in late 2010. While the principles are intended to inform an updated agreement—dubbed CFE Three—Obama administration officials insist that NATO conventional military levels should not be conditional on operational tactical nuclear weapons cuts.²⁰

Some Russian analysts, however, claim that the military threat from China is inevitably growing more significant as Beijing enhances its

conventional power projection and nuclear capabilities.²¹ Military improvements, combined with the sheer size of territory potentially vulnerable to Chinese aggression, have led some experts to suggest that Russia should retain its tactical arsenal as a hedge against future threats from the Far East.²² However, neither Russia's national security strategy nor its military doctrine mentions or even implies a threat from China, enhancing possible misunderstandings about what its tactical nuclear weapons are intended to do.

The broad outlines of an agreement on tactical nuclear weapons are already apparent: reciprocal data exchange of the size, location, and related delivery system of the relevant weapons; verification procedures to enforce the provisions of the treaty; and an accepted categorization for the class of weapons systems to be included and their operational status.²³ Given earlier failed attempts at bilateral talks on tactical nuclear weapons, it will be difficult—though necessary—for both Washington and Moscow to take the unprecedented steps required on these three issues.

First, each country should reveal its tactical nuclear weapons inventory, location, and operational status, either publicly or through a private data exchange mechanism, to produce a comprehensive database. To assuage Russia's concerns about the security of its declared tactical arsenal, there are well-established information technologies that "allow states to exchange detailed stockpile data while maintaining complete control over access to its contents."²⁴

The second component of an agreement on tactical nuclear weapons reductions is a verification of any data exchanged and a confirmation that the provisions of the treaty have been implemented on an agreed timeline. While verifying limits on Russia's operational tactical nuclear arsenal would be challenging, U.S. officials believe that if the Kremlin reverses its earlier opposition, there are sufficient verification procedures and techniques available to ensure Russian compliance with any treaty provisions.²⁵ In the past fifteen years, there has been an increase in the number and scope of demonstrated technologies and procedures that could provide adequate verification, including the use of radiation detection, remote measurement, and tamper-indicating tags.²⁶

Finally, two important categorization issues require clarification. There is no universally accepted categorization of tactical nuclear weapons. However, the United States and Russia have published definitions sufficiently similar that they could be combined for the purposes of a

bilateral treaty.²⁷ In addition to short-range tactical bombs, all nuclear weapons not designed for use on intercontinental ballistic missiles (ICBMs), submarine launched ballistic missiles (SLBMs), and heavy bombers should fall under any joint U.S.-Russia definition.

The more important categorization issue is what should constitute an “operationally deployed” tactical nuclear weapon. Unlike strategic nuclear weapons, which can be launched at short notice, tactical weapons are not routinely loaded on U.S. or Russian delivery vehicles. In both countries, however, there are distinctions between military bases certified for maintaining operational and nonoperational tactical nuclear weapons. Operational storage sites contain tactical nuclear weapons equipped for deployment on short notice, as well as air or naval delivery systems; permanent, or nonoperational, storage sites contain warheads rendered unusable due to removal of tritium and other critical components, and these sites do not house delivery vehicles. The United States and Russia each clearly understand the distinction between these sites.²⁸

The goal of tactical nuclear weapons limitation talks would be to agree to a list of bases where any tactical nuclear weapons would be considered operational, and permanent storage sites where they would be monitored as inactive reserves. Russia and the United States could employ the range of verification procedures used extensively and effectively for the START I Treaty to monitor operational and permanent storage sites. These methods ensure a high degree of confidence that cheating would be detected promptly and decisively.²⁹ To make tactical nuclear weapons limitations permanent, both sides should verifiably dismantle nonoperational warheads at assembly-disassembly facilities at the Pantex Plant in the United States and either the Trekhgornyy, Zlatoust-36, or Lesnoy, Sverdlovsk-45, sites in Russia. Dismantling thousands of warheads will take decades; the current projected dismantlement queue in the United States stretches to 2022. In the interim, inactive tactical nuclear stockpiles will provide a technical and geopolitical hedge should either country shirk its arms control commitments—though refurbishing large numbers of nonoperational weapons for use would require time, and their redeployment to nuclear-capable bases would be detected.

Missile Threats and Missile Defenses

To protect U.S. allies, partners, and civilian and military personnel deployed abroad from states like Iran and North Korea, the George W. Bush and Obama administrations both proposed ballistic missile defense (BMD) strategies for Europe. Though each strategy intended to take Russian political and military concerns into account, both encountered strong resistance from Russian officials. Since U.S. missile defense capabilities in Europe will quantitatively and qualitatively improve as the number of Russian ICBMs decreases, it will be necessary to provide additional assurances to Moscow of the intentions and capabilities of missile defense in a bilateral treaty that limits each country to one thousand operationally deployed nuclear weapons. This will require going further than the New START Treaty, which does not place any constraints on U.S. missile defense programs or deployment plans.

In September 2009, the Obama administration canceled its predecessor's European missile defense architecture, claiming that an updated National Intelligence Estimate (NIE) found that Iran was producing and deploying short- and medium-range missiles faster than previously projected, and that there were steady improvements in missile defense sensor and interceptor capabilities for tracking and engaging them. Undoubtedly, the intention to reset U.S.-Russia relations played a role, though administration officials denied this was a direct consideration. President Medvedev hailed the decision and Russian military officials downplayed earlier threats against Europe, such as restationing short-range missiles in the Russian territory of Kaliningrad, which borders Poland and Lithuania.³⁰

The Obama administration's Phased Adaptive Approach (PAA) ballistic missile defense strategy for Europe is a ten-year plan whereby U.S. interceptors will be deployed in four stages based on missile threat trend lines from Iran or other adversaries. Like other missile defense

schemes, this ambitious strategy—particularly in the later stages—is based on a belief that unproven military capabilities can be supported and funded by Congress, demonstrated through realistic testing, and deployed on time. Administration officials have emphasized that if the timelines for effective radars or interceptors shift, or missile threats change, the PAA is “flexible,” “scalable,” and “rapidly re-locatable.” These terms serve as placeholders as the Pentagon studies the appropriate mix of capabilities required, while also enhancing Russia’s uncertainty about the system’s eventual composition. The current PAA plan adheres to the following timeline.³¹

- **2011:** Deploying two to three Aegis BMD ships, fielding between 80 to 120 Standard Missile-3 (SM-3) IA interceptors on twenty-four-hour patrols to the Mediterranean Sea and North Sea to attempt to cover southern Europe.
- **2015:** Placing twenty-four land-based (still untested) SM-3 IB interceptors—or Aegis Ashore—in Romania to triple the amount of territory under protection.
- **2018:** Placing twenty-four faster land-based (undeveloped) SM-3 IIA interceptors in Poland to protect the entire land mass of Europe.
- **2020:** Upgrading both land-based sites with the faster and more capable (undeveloped) SM-3 IIB interceptors that could intercept Iranian ICBMs threatening Europe and the United States.

The bottom-line Russian interest in U.S. missile defenses is to ensure that they do not develop “quantitatively or qualitatively in such a way that threatens the potential of Russia’s strategic nuclear forces.”³² This objective is consistent with stated U.S. missile defense policy.³³ Russian officials recognize that the first two stages of the PAA system cannot pose such a threat, since the velocity of SM-3 Block IA/IB interceptors based at sea—or in Romania and Poland—would not endanger Russia’s land-based ICBMs flying over the Arctic, or its Northern and Pacific Fleet submarine forces in their home ports. However, some Russian experts are concerned that the performance characteristics of the SM-3 IIA and IIBs, scheduled for deployment in 2018 and 2020, could threaten Russia’s ICBM force.³⁴ Russian misperceptions are understandable given the outstanding questions that remain about the eventual PAA architecture. How many Aegis BMD ships will be on station in Europe?

Will such ships be routinely deployed to the Norwegian Sea or Barents Sea? Will the SM-3 IIB be liquid-fueled, and therefore less compatible with Aegis ships? How many land-based SM-3 IIBs will eventually be placed in Romania and Poland?³⁵ According to U.S. officials, no Standard interceptor missiles will have the velocity or range to catch up to much faster Russian ICBMs.³⁶

To alleviate Russian concerns, the Obama administration is pursuing joint missile defense, much as previous administrations unsuccessfully attempted in the 1990s. Such unprecedented collaboration could be a transformative opportunity for U.S.-Russia relations, but the Obama administration will need to weigh Russia's desire to be a meaningful participant against Congress's demand for robust missile defense.

The Obama administration hopes that Russia will participate in the PAA system with its own radar and sensory systems, thereby recognizing that missile defenses do not threaten its strategic nuclear force. The most immediate form of cooperation that has been discussed in bilateral working groups is integrating Russia's existing high-frequency early-warning radars in Armavir, Russia, and Gabala, Azerbaijan, into Europe's missile defense architecture. These radars, though well situated for acquiring and tracking missiles launched from Iran, are not useful for assisting the Standard interceptors from discriminating among decoys and engaging missiles in mid-course. As a Pentagon official noted of Russia's early-warning radars, "The technology isn't great, but the geography is perfect."³⁷ One option is to upgrade the radars to support the Standard in fire control and missile engagement. Such cooperation, however, might aggravate Russian fears, as Pentagon officials have indicated that any Russian participation in the PAA would only be to supplement American sensors and missiles. Currently, there is no conceivable joint structure whereby Russia could hold a veto over the launch of a Standard missile to attempt to intercept a ballistic missile from Iran or elsewhere.

Joint threat assessment remains a significant stumbling block to robust U.S.-Russia missile defense collaboration. The explicit focus of the European PAA missile defense system is to counter Iran's potential nuclear weapon and ballistic missile threats, a subject on which U.S. and Russian officials hold divergent views. In March, Russian foreign minister Sergei Lavrov asserted that "Iran has no missiles capable of striking Europe . . . and is unlikely to develop [such missiles] in the foreseeable future."³⁸ Russia's ambassador to NATO, Dmitry Rogozin,

went so far as to write that Iran could not create “within the next twenty years a ballistic missile capable of striking the territory of the U.S. or any of NATO’s European allies.”³⁹ Both projections are strikingly at odds with the findings of the 2009 NIE. Moreover, in addition to the skepticism of U.S. intelligence, many Russian officials believe that the United States simply exaggerates Iranian threats as a pretext to expand and anchor U.S. influence within the former Soviet sphere.

In an attempt to forge a closer consensus, the Obama administration has conducted a round of joint threat assessments of ballistic missile threats with U.S. and Russian government experts. The meetings have shown some promise, with Russian experts generally accepting that Iran has made recent and unexpected strides in its short-range and medium-range ballistic missile capabilities. Less certain is whether future joint threat assessments can reach a degree of consensus over the direction and scope of Iran’s avowed ICBM goals.⁴⁰ Moreover, it remains to be seen whether an assessment of Iran’s ballistic missile threats made by such joint expert working groups will be matched by future official Russian statements and lead to U.S.-Russia missile defense collaboration.

Conventional Weapons on Nuclear-Capable Delivery Systems

In the coming decades, hundreds of strategic delivery systems will remain in the force structure even as the U.S. nuclear arsenal shrinks. Given the costs already spent in developing and deploying them, some of these weapons systems will be provided with updated, nonnuclear roles and missions. They will increasingly be dedicated to conventional missions that administration officials acknowledge are a more relevant, usable, and responsive “series of graded options that can be a realistic, serious deterrent.”⁴¹ These nonnuclear strike capabilities will increasingly become an important though limited tool in U.S. military strategy to hold at risk distant, deeply buried, and time-sensitive targets that cannot be threatened by other nonnuclear means. To preserve the integrity of the arms control regime, these systems should be permitted but counted under the nuclear warhead ceilings.

Russian officials are most concerned about the concept of Prompt Global Strike (PGS), listed as the fourth greatest external military threat in Russian military doctrine.⁴² While PGS has neither a common definition nor concept of operations, most Pentagon officials envision it as simply a niche capability that could be called upon to strengthen regional deterrence architectures. Others have a more expansive notion of potential missions, including providing the president with “near-nuclear” options.⁴³ Secretary of Defense Robert M. Gates has described PGS as the capability to “attack targets anywhere on the globe in an hour or less.”⁴⁴ PGS programs have received enhanced research and development funding that was recently projected to grow from \$70 million in FY2009 to \$575 million for FY2015.⁴⁵

Near-term potential PGS capabilities involve replacing nuclear warheads on U.S.-based Minuteman III ICBMs with conventional payloads (or no munition at all, thus relying on kinetic impact). The fielding date for this Conventional Strike Missile has slipped from 2015 to 2017, and now perhaps to 2020.⁴⁶ Another PGS option would

require modifying the Trident-D5 SLBM to hold conventional payloads, although Congress cut funding for this Conventional Trident Modification program in 2008. Whether deployed on ICBMs or SLBMs, conventional PGS systems would count against the 1,550 strategic warhead limit in the New START Treaty. There are also programs and budgets for more advanced and unproven PGS capabilities, such as the Falcon Hypersonic Technology Vehicle (HTV), which would fly through space carrying conventional bombs, reenter the atmosphere, and then glide on a maneuverable path for several thousand miles at hypersonic speeds to a target.⁴⁷ According to U.S. officials, such “boost-glide” HTV systems would not count against New START Treaty limits.⁴⁸

While operational PGS systems are five to ten years away, Russian officials have already expressed several concerns. First, and most important, U.S. conventional missile launches from nuclear-capable delivery systems could be misinterpreted by Russia’s reportedly unreliable early-warning radar system as carrying a nuclear payload, thus potentially prompting an unintentional retaliatory nuclear strike. Second, PGS may blur the nuclear bright-line, as some PGS conventional weapons “have the capabilities similar to those of smaller nuclear warheads,” according to General Vladimir Verkhovtsev, chief of the 12th Main Directorate.⁴⁹ Indeed, this is an explicit goal of the system, with Vice Chairman of the Joint Chiefs of Staff General James E. Cartwright noting that “prompt global strike should also serve as an alternative to comparable nuclear weapons, particularly where the use of nuclear weapons would be inappropriate.”⁵⁰ Third, some fear PGS systems could upset the strategic balance through conventional counterforce strikes against Russian military targets.

In response to nuclear ambiguity concerns, several solutions have been proposed that could distinguish the payload of conventional missile launches from nuclear-capable systems. Some build on existing transparency mechanisms, whereas others are untested and novel for PGS-specific missions. All of these proposals have their shortcomings, which could be exacerbated during international crisis situations. Among the more politically and technically feasible proposals: declaring one ICBM field as being “conventional only” and allowing Russian inspections to verify that missiles deployed there could not carry nuclear payloads; providing video monitoring of ICBM silos or SLBM tubes of missile shrouds containing conventional payloads; using a

depressed trajectory for conventional strikes to distinguish them from nuclear ICBMs that follow a parabolic arc; designing a new missile with a distinct boost signature for conventional-only missions; and notifying Russia shortly before a PGS launch, through the Agreement on Notifications of ICBM and SLBM Launches or the currently moribund Joint Data Exchange Center.⁵¹ As of June 2010, the Pentagon was still studying how to resolve the nuclear ambiguity concern for PGS systems.⁵²

Russian strategic nuclear weapons can also be operationally deployed on a nuclear triad of land-, sea-, and air-based systems, each of which could also carry conventional warheads. However, Russia apparently has no concrete plans or programs to develop and deploy PGS-like capabilities. Given the constraints on its defense budget and competing priorities to modernize its nuclear capabilities, Russia probably will not attempt to match U.S. PGS programs.

Conclusion and Recommendations

Without resolution of the three interlinked issues described in this report, a bilateral treaty limiting the United States and Russia to one thousand operationally deployed nuclear weapons will be impossible. Specifically, four things must happen for such a treaty to be possible: New START Treaty ratification and preliminary implementation; agreement on an updated CFE Treaty; discussions between U.S. and Russian officials on controlling operational tactical nuclear weapons; and an understanding between the United States and Russia about U.S. missile defense capabilities that will not put a diminished arsenal of Russian ICBMs at risk, including possible missile defense collaboration.

Such progress toward deeper nuclear cuts will require sustained improvement in U.S.-Russia relations. Preliminarily, the Obama administration's "reset" has successfully produced Russian cooperation on nuclear priorities, such as finalizing a plutonium disposition agreement, negotiating the New START Treaty, and imposing additional United Nations sanctions against and canceling the transfer of advanced S300 surface-to-air missile systems to Iran. Going forward, bilateral relations must be strong enough to preserve nuclear arms control as an overriding strategic priority, immune to inevitable disagreements between Washington and Moscow over common approaches to other issues. As President Medvedev noted regarding nuclear reduction talks, "[the] negotiation process is not for the pleasure of the process itself, but it is done in order to reach practical, specific outcomes."⁵³ Closer and more enduring U.S.-Russia relations are especially important since—given that the New START Treaty required ninety meetings over the course of one year—those specific outcomes will not be reached until a second Obama term, or until after a forty-sixth president is elected.

The following recommendations outline a framework for moving toward the next round of bilateral arms control negotiations.

***LIMITING OPERATIONAL
TACTICAL NUCLEAR WEAPONS***

- The Obama administration should use the Bilateral Presidential Commission Working Group on Arms Control and International Security to discuss practical and near-term confidence-building measures on tactical nuclear weapons with Russia.
- The Obama administration should reverse existing policy that prohibits funding enhanced security upgrades at all of Russia's frontline bases where tactical nuclear weapons are maintained with some level of operational status.
- Because Russia and NATO will revisit the stalled CFE Treaty, the Obama administration should reach consensus with NATO allies about what changes in allied conventional forces could be implemented to induce Russian cuts in operational tactical nuclear weapons.
- The Obama administration should direct the intelligence community to produce an updated assessment of Russia's inventory of tactical nuclear weapons, operational status, location, and supporting military doctrine.

U.S.-RUSSIA MISSILE DEFENSE COLLABORATION

- The Obama administration should continue joint ballistic missile threat assessments, system effectiveness assessments, exercises, and computer modeling and simulations with Russia. It should do so both bilaterally and through the NATO-Russia Council.
- Given Russian suspicions about the capabilities and intentions of missile defenses, the Bilateral Presidential Commission Working Group on Arms Control and International Security should provide Russian officials with regular briefings on the expected Phased Adaptive Approach architecture through 2020.
- As an early-warning mechanism for ballistic missile launches, the Obama administration should revive the Joint Data Exchange Center (JDEC), which has been needlessly delayed by Russia over tax and

liability issues. The agreement is supposed to expire in 2010, but can be extended for five years if both countries agree.

- The Obama administration should promote Russian missile defense collaboration in the European PAA, at minimum through the integration of the early-warning radars in Armavir, Russia, and Gabala, Azerbaijan.
- The Pentagon plans to have thirty-eight Aegis BMD ships by 2015. Assuming the normal three-to-one rule of deployment-rest-reset, the United States could field more than a dozen Aegis ships at any time. The Obama administration should discuss with Russia how many ships it will normally deploy in support of the PAA in Europe, as opposed to other regions.
- Given Russian concerns about the European PAA capabilities scheduled for deployment by 2018 and 2020, Washington and Moscow should be seeking an agreement on U.S.-Russia missile defense collaboration well beforehand.

CONVENTIONAL WEAPONS ON NUCLEAR-CAPABLE DELIVERY SYSTEMS

- The Pentagon should develop a common definition and supporting doctrine for Prompt Global Strike to clarify the concept within the U.S. government, and provide transparency to allay Russian fears about potential capabilities and missions.⁵⁴
- Although the administration maintains that boost-glide PGS capabilities would not be counted under New START, they should be counted in future treaties, since they have comparable military capabilities to nuclear-armed ballistic missiles, which are counted as strategic delivery vehicles. In preparation, the Pentagon should consider possible arms control constraints on boost-glide systems while it studies the appropriate mix of capabilities for PGS.⁵⁵
- The administration should conduct a comprehensive analysis of all available technical mechanisms that could provide reliable transparency for conventional payloads mounted on strategic delivery vehicles.⁵⁶
- The Obama administration should direct the intelligence community to conduct an assessment of what effects U.S. PGS capabilities would have on the global regime in restraining ballistic missile proliferation.

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Cover Photo: Russia's president, Dmitry Medvedev, stands in front of a road-mobile intercontinental ballistic missile on a visit to a missile base in Teikovo in the Ivanovo region of Russia on May 15, 2008 (RIA Novosti/Courtesy of Reuters).

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