

# Getting STARTed: Short-Term Steps to Advance the Long-Term Goal of Deep Nuclear Reductions

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## Summary

The next round of U.S.-Russia arms control presents some truly daunting challenges. Realistically, another arms reduction treaty is likely to be out of reach for the Obama administration, even if it wins a second term. Fortunately, there is much that it could do in the remainder of its first term—unilaterally, bilaterally, and multilaterally—to lay the groundwork for another treaty while reducing nuclear risks. To this end, the administration should:

- Secure presidential involvement in the ongoing U.S. targeting review;
- Publicly challenge Russia to engage on tactical nuclear weapons;
- Design a single-warhead intercontinental ballistic missile to replace Minuteman III;
- Identify a clear military goal for ballistic missile defense cooperation;
- Prepare the domestic ground for counting all Conventional Prompt Global Strike systems as nuclear-armed in future arms control agreements;
- Pursue non-binding confidence-building measures on conventional cruise missiles;
- Restart reciprocal transparency visits to nuclear-weapon production complexes; and
- Engage other nuclear-weapon states.

Further reductions can ultimately be achieved only if other states choose to play their parts. Yet, by putting constructive proposals on the table, the United States stands to gain whether or not international cooperation is forthcoming. If other states do engage, the United States will have succeeded in starting the long process toward a world with far fewer nuclear weapons; if they do not, it will be clear to the international community that the real barriers to progress in disarmament do not lie in Washington.

New START was the easy part. It took a year to negotiate. Its eight-month ratification debate was highly contentious and deeply politicized. And, when the Senate finally voted, the agreement set a new record for the nuclear arms control treaty ratified by the smallest margin. Nonetheless, in spite of the many difficulties New START encountered, the truly daunting arms control challenges lie ahead.

Because New START's reductions were relatively modest, the United States and Russia were able to sign it without reaching an understanding on—or, in some cases, even discussing—the most technically complex and politically contentious issues facing arms control: tactical nuclear weapons, non-deployed warheads, ballistic missile defense, and high-precision conventional weapons. If further progress is to be made, they will not have the luxury of agreeing to disagree in the future. Looking further ahead, arms reductions will not be able to continue on a bilateral basis indefinitely. At some point, other nuclear-armed states will have to be integrated into the process, creating a whole new set of technical, political, and strategic challenges.

In spite of these difficulties, doing nothing is not an option. President Obama has laid out a clear and ambitious nuclear agenda, including gradual—but ultimately deep—reductions in nuclear weapons. There will be domestic pressures to make progress toward this goal, including—as then-Defense Secretary Robert Gates pointed out in May 2011—for budgetary reasons.<sup>1</sup> Simply ignoring contentious strategic issues such as ballistic missile defense could jeopardize the reset with Russia. Washington will also want to demonstrate to the international community, including at the 2015 Nuclear Non-Proliferation Treaty (NPT) Review Conference, that it is living up to its disarmament commitments.

Even if it wins a second term, the Obama administration is unlikely to be able to conclude another arms reduction treaty. However, there is much that it could do—even in the remainder of its first term—to lay the groundwork for one while reducing nuclear dangers. There are unilateral adjustments the United States could make to its own nuclear posture, as well as confidence-building and transparency measures that could be advanced on a bilateral or even multilateral basis. Such steps would not substitute for treaty-based arms control, but they would help improve its prospects. The Obama administration has indicated an interest in pursuing such steps but has yet to set out a comprehensive agenda. Here are eight ideas.

## **Secure Presidential Involvement in the Targeting Review**

The size of the nuclear force that the United States requires is ultimately set by its war plans. Examining these plans to identify excess capability is a prerequisite for further reductions. To this end, U.S. National Security Adviser Tom

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Donilon, speaking at the Carnegie International Nuclear Policy Conference on March 29, 2011, announced that the Department of Defense would conduct a comprehensive review of targeting requirements.

This review will have to confront a number of fundamental questions about U.S. nuclear strategy. For instance, should the United States continue to target Russia's 151 silos in which intercontinental ballistic missiles (ICBMs) are emplaced?<sup>2</sup> Given that each silo is probably targeted with two warheads, it appears that more American warheads are devoted to Russian silos than any other type of target. Proponents of targeting silos generally argue that doing so would allow the United States to limit the damage it would suffer in a nuclear war. Opponents argue that because Russia has many other much more survivable weapons (including mobile ICBMs), destroying Russian silo-based ICBMs would make no *meaningful* difference.

It is critical that key political leaders—up to and including the president—are engaged on questions of targeting sufficiency. The military can advise on how much more damage the United States would suffer in a nuclear war if it did not target Russian silos, but it is ultimately only the president who can decide whether the United States would be meaningfully worse off as a result. Similarly, while the military can calculate how many nuclear weapons would be required to inflict a certain level of damage on an adversary, it is not its responsibility to predict whether the threat of doing so would be likely to deter the adversary from infringing on vital American interests in the first place.

If the president does not stay engaged—and instead delegates the final decision on key issues to his advisers—then the prospects for change will be significantly lessened. Historically, attempts to change nuclear strategy have encountered fierce bureaucratic opposition.<sup>3</sup> By taking tough decisions personally and laying down clear and unambiguous precepts for U.S. targeting policy, the president can ensure that the Pentagon does more than simply repackage current policy.

## **Publicly Challenge Russia to Engage on Tactical Nuclear Weapons**

Nuclear weapons are generally categorized as tactical or strategic. Although the former are often described as short-range weapons designed to help achieve specific military objectives on the battlefield, the reality is that “tactical” has effectively become a catch-all term for the wide variety of systems that have been left out of “strategic” arms control. Moreover, the very idea of distinguishing between tactical and strategic weapons is flawed. Any use of a nuclear weapon would have profound strategic consequences that would reverberate worldwide. Incorporating tactical nuclear weapons into nuclear arms control is both a U.S. priority and a necessary step to reaching low numbers.

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The United States has about 500 tactical warheads (about 200 of which are deployed in Europe).<sup>4</sup> Russia has at least four times that number, and perhaps significantly more.<sup>5</sup> Ultimately, the long-term objective of U.S. arms control policy should be to count “a nuclear weapon as a nuclear weapon” by seeking to negotiate a single limit on warheads of all types (tactical, strategic, deployed, and non-deployed). Although this appears to be the only remotely practical way of limiting tactical nuclear weapons, it faces some formidable challenges. A complex and intrusive verification scheme would have to be developed. Moreover, because Moscow has linked tactical nuclear weapons to its priority issues—including ballistic missile defense—negotiating the relevant trade-offs would inevitably be extremely difficult and time consuming.

Fortunately, mutually beneficial transparency about tactical nuclear weapons is possible in a much shorter timeframe than a treaty limiting them. The Next Generation Working Group on U.S.-Russian Arms Control has, for instance, suggested that Russia and the United States could conduct reciprocal inspections at sites where tactical nuclear weapons *used* to be stored to verify their absence. Because verifying the absence of weapons is a much simpler problem than verifying their presence, this would be a good first step toward the cooperative development of a comprehensive verification regime for all warheads. Moreover, as a result of efforts to consolidate tactical nuclear weapons at the end of the Cold War, both states say they have a number of empty storage facilities where inspections could take place.

Unfortunately, Moscow’s insistence that it will not even discuss tactical nuclear weapons until all of them have been withdrawn to national territory currently prevents even this modest first step. To break this logjam, President Obama should *publicly* invite Russia to verify the absence of tactical nuclear weapons at U.S. and NATO facilities from where they have been withdrawn—in return for a reciprocal commitment from Russia. It would be awkward for Russia to refuse such a manifestly reasonable proposal. Indeed, similar tactics have paid dividends in the past. In June 1989, for instance, President George H. W. Bush broke a deadlock in the START talks by publicly inviting the Soviet Union to take part in a series of verification exercises.

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## **Design a Single-Warhead ICBM to Replace Minuteman III**

In December 2010, the Russian government announced funding for the development of a new “heavy” missile: a liquid-fueled silo-based ICBM equipped with multiple warheads.<sup>6</sup> Although cost-efficient, such a system would be destabilizing. By “putting multiple nuclear eggs in each ballistic basket,” Russia

would merely compound its already serious concerns about the survivability of its nuclear forces. These concerns reduce Russian willingness to take part in nuclear arms reductions. Worse still, in a deep crisis, they might drive Russia to use its vulnerable missiles early, before the United States could destroy them.

Russia's ICBM modernization plan should prompt the United States to readopt a long-standing arms control goal, pursued throughout the 1980s and 1990s, of eliminating all ICBMs armed with multiple warheads. A good interim milestone that should be pursued in the next round of U.S.-Russia negotiations is a ban on the deployment of new types of multiple-warhead silo-based ICBMs. Russia currently has no interest in such a ban. However, it may be induced to accept one as a *quid pro quo* for Washington taking steps to address Moscow's long list of concerns.

This goal of banning new deployments of silo-based multiple-warhead ICBMs has implications for the United States' own modernization plans. The Pentagon is starting to consider requirements for a successor to Minuteman III, currently the only U.S. ICBM, which is due to remain in service until about 2030. The United States should commit now to this successor being a single-warhead missile. Such a decision would have minimal implications for the United States' nuclear posture; although Minuteman III can carry three warheads, most missiles have already been converted to carry just one and the remainder are due to be converted shortly. However, it would be a positive step for arms control. It would reduce preemptive pressures in a crisis, help assuage Russian concerns about the United States' "upload potential" (its ability to load reserve warheads onto delivery vehicles that are loaded with fewer warheads than they were designed to carry), and advance the prospects for a ban on new deployments of silo-based multiple-warhead ICBMs. In fact, for these reasons, designing a new single-warhead ICBM would actually be preferable, from an arms control perspective, to extending the lifetime of Minuteman III beyond 2030.

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## **Identify a Clear Military Goal for Ballistic Missile Defense Cooperation**

Moscow is becoming increasingly concerned about what it perceives as the United States' growing ability to threaten Russian nuclear forces with *conventional* weapons. At the top of Moscow's list of concerns is ballistic missile defense.

The Phased Adaptive Approach (the Obama administration's new ballistic missile defense architecture for Europe) is initially focused on defeating the medium- and intermediate-range missiles that Iran is currently developing. However, from around 2020, the United States plans to deploy interceptors that have some capability against ICBMs. This aspect of the Phased Adaptive

Approach has caused considerable concern in Russia. More generally, Moscow worries that current U.S. plans are merely a “stepping stone” to a much larger and more capable system designed to negate Russia’s deterrent. Easing these concerns is a pre-requisite to further arms control.

It bears emphasizing that, from a technical perspective, Russian concerns are considerably overstated. The land- and sea-based interceptors to be deployed in the Phased Adaptive Approach are never likely to be cost effective at the margins against Russia. Moscow could deploy countermeasures more quickly and cheaply than Washington could build interceptors. For this reason, a lasting bipartisan consensus in the United States, especially in Congress, around the Phased Adaptive Approach scaled to meet the evolving Iranian missile threat, might just be an acceptable outcome for Moscow—not least because such a consensus could go some way to reassuring Russia that the United States would not seek to massively expand ballistic missile defenses in future.

Cooperation offers Russia a way to help build this consensus. Russia, the United States, and NATO all say they want to cooperate on ballistic missile defense. Indeed, Russia and NATO are currently engaged in difficult negotiations over a framework for cooperation. They should agree that the military goal of cooperation is the development of more effective defenses against emerging missile threats than either party could build alone. If Russia and NATO can succeed in this goal—by, for example, incorporating well-placed Russian-owned radars into a joint early warning system—then it would become manifestly contrary to U.S. interests to jeopardize cooperation by expanding missile defenses to the point where they could conceivably pose a threat to Russia’s deterrent. This realization might help to cement a political consensus within the United States around the Phased Adaptive Approach.

## **Prepare the Domestic Ground for Counting All Conventional Prompt Global Strike Systems as Nuclear-Armed in Future Arms Control Agreements**

Conventional Prompt Global Strike is a U.S. program to develop high-precision conventional weapons that could be delivered anywhere in the world within an hour. Russia worries that such systems could pose a threat to its nuclear forces. To accommodate these concerns, the United States agreed that conventionally armed ICBMs would count toward the central limits for New START. However, Washington recently announced that it would not develop conventionally armed ICBMs and would instead focus on boost-glide vehicles (rocket-boosted hypersonic gliders that would travel in the upper atmosphere for most of their trajectory). The boost-glide concept is still embryonic. Indeed, it would not be surprising if the first deployments did not occur during the lifetime of

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New START. However, if and when these and other, more exotic systems are developed, Conventional Prompt Global Strike is likely to cast an increasingly long shadow over arms control.

One potential solution is to agree to count all Conventional Prompt Global Strike systems (not just conventionally armed ICBMs) as nuclear-armed under any future arms control agreement (this rule would obviously have to apply equally to any similar systems that Russia might develop in the future). This arrangement ought to be acceptable to the United States. Conventional Prompt Global Strike is likely to be *uniquely* useful only in a very narrow range of circumstances. Indeed, the George W. Bush administration, which first seriously explored the concept, and its successor have both stated that Conventional Prompt Global Strike would be a niche capability to be deployed in small numbers. Moreover, the expected downward pressure on the defense budget is likely to further reduce enthusiasm for deploying this system *en masse*.

That said, limits on Conventional Prompt Global Strike have the potential to become controversial within the United States. To try to avoid this possibility, the Obama administration should make systematic efforts *now* to emphasize to domestic audiences the extremely high costs of this program and the very limited set of circumstances in which there would not be another, more cost-effective option.

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## **Pursue Non-Binding Confidence-Building Measures on Conventional Cruise Missiles**

Moscow's fears about U.S. conventional weapons extend to slower systems—cruise missiles in particular. Russian concerns that these weapons pose a threat to its strategic forces are often ignored or dismissed in the United States. However, they appear to be genuine and could prove to be the “joker in the pack” during future nuclear arms control negotiations.

Formal negotiations—let alone actual limits—on conventional cruise missiles (or any other conventional munitions except Conventional Prompt Global Strike) would not be acceptable to the United States. However, Washington should be willing to try to ease Russian concerns through non-binding confidence-building measures.

For instance, there appears to be a genuine technical disagreement between U.S. and Russian experts about whether conventional cruise missiles could actually destroy or disable ICBM silos. To try to narrow this gap, the U.S. and Russian governments should quietly task their own technical experts with conducting a joint study into the threat that conventional cruise missiles pose to silos.

Alternatively, a more public version of the same study could be conducted jointly by the U.S. and Russian national science academies.

The United States and Russia could also explore the possibility of conducting non-binding data exchanges about the rough number and location of conventional cruise missiles. To the extent that Russian fears are based on a lack of knowledge about U.S. cruise missile deployments, a data exchange might help ease them. It bears emphasizing that a data exchange would not be a one-sided exercise conducted purely for Russia's benefit. Moscow has been investing heavily in conventional cruise missiles and a data exchange could, therefore, be useful for the United States, too.

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## **Restart Reciprocal Transparency Visits to Nuclear-Weapon Production Complexes**

As their nuclear arsenals shrink, Russia and the United States are likely to become increasingly concerned about the possibility of the other rearming. Indeed, Russia is already worried about the U.S. upload potential. Future limits on warheads—as well as on launchers and delivery vehicles—would help ease these fears. However, the possibility of building warheads from scratch will remain and must eventually be addressed.

The American and Russian nuclear-weapon production complexes are currently very differently sized. The United States has not introduced a new warhead type into its arsenal since the end of the Cold War. It ensures the viability of its aging warheads through periodic efforts to extend their service lives. Currently, it can produce no more than about twenty pits (the plutonium cores of nuclear weapons) per year.<sup>7</sup> Russian warheads, by contrast, are reported to have service lives of only ten or fifteen years.<sup>8</sup> Russia must continually manufacture warheads (to either new or existing designs) to replace those that are retired. It has the capability to produce a few hundred pits per year, if not more. It also has a greater capability than the United States to assemble complete warheads from their components—although the disparity here is not quite as severe as that in pit production capabilities.

As numbers come down, the difference between the U.S. and Russian complexes will become increasingly significant. Accordingly, the United States should adopt two long-term arms control goals. First, it should seek to reduce the size of Russia's nuclear-weapon production complex. Second, it should aim to enhance the transparency of both states' complexes to ensure timely warning of rearmament.

Both of these goals are exceptionally challenging and, realistically, this issue is nowhere near ripe for formal negotiations. However, progress could be made



almost immediately by reviving informal visits to one another's nuclear-weapon production complexes. Such visits occurred previously between the Siberian Chemical Combine at Seversk and the Los Alamos National Laboratory from 1994 to 1998 (actually as part of an effort to improve fissile material security). Restarting these visits would enhance mutual transparency and ultimately pave the way for formal limits some way down the line.

The goal of enhancing nuclear-weapon complex transparency has implications for the United States' own plans. The Obama administration is seeking to revitalize the U.S. nuclear-weapon infrastructure, including by modestly increasing U.S. pit production capability. These plans are broadly to be welcomed, as they would help close the gap in production capacity with Russia and thus enhance stability at low numbers. However, they need to be modified slightly in order to ensure full consistency with arms control objectives. In particular, the United States plans to build two new facilities: the Chemistry and Metallurgy Research Replacement at Los Alamos and the Uranium Processing Facility at the Y12 National Security Complex in Tennessee. To facilitate future reciprocal visits, the United States should include transparency as a design criterion for both facilities.

## Engage Other Nuclear-Weapon States

Both Russia and the United States have made it clear that the arms reduction process will eventually have to be multilateralized. To reach truly low numbers, the arsenals of all states that have acquired nuclear weapons without violating international law will have to be regulated and those of other nuclear-armed states rolled back. The first step is to broaden the U.S.-Russia process to include the other three nuclear-weapon states recognized by the NPT (China, France, and the United Kingdom).

Many analysts and officials in both Washington and Moscow are currently talking about "one more major bilateral nuclear arms reduction negotiation." By contrast, British, Chinese, and French officials discuss multilateral arms control as a much more distant prospect. Some even insist that their states should be formally involved only at the final step of actually abolishing nuclear weapons!

Neither of these positions is entirely reasonable. Today, the United States and Russia each have around 5,000 nuclear warheads (with many more awaiting dismantlement); the British, French, and Chinese arsenals are a factor of 10 or 20 smaller and considerably less capable. Because there will continue to be a large gap—both in terms of numbers and capability—even after the next round of U.S.-Russia arms control, it would be unreasonable for Moscow and Washington to immediately demand the initiation of formal multilateral arms control negotiations. Equally, it would be unreasonable for China, France, and the UK

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to stay out of the arms control process entirely. Russia and the United States do have valid concerns—including the fear that China will build up as they build down—even if five-way treaty negotiations would not be the right mechanism for addressing them.

A more productive approach would be for France, the United Kingdom, and, in particular, China to take part in a multilateral transparency regime. Under various bilateral agreements, Russia and the United States have conducted—and still conduct—extensive data exchanges about their nuclear forces. (The START data exchanges were even made public.) China, France, and the UK could participate in a similar process on a voluntary basis. They could start by periodically releasing simple aggregate data about warhead, missile, and launcher numbers (indeed, France and the UK have already done so, but only on an ad-hoc basis). Over time, they could gradually increase the degree of detail in their declarations. Information could be exchanged just among the five nuclear-weapon states or it could be made public. Either way, such transparency could help reassure Russia and the United States about British, Chinese, and French intentions and thus permit them to make deeper bilateral reductions than would otherwise be the case. It would also pave the way for treaty-based multilateral arms control at some point in the future.

China, in particular, would have serious concerns about such a process. Its current policy of opacity stems, in part at least, from the fear that greater transparency would undermine the survivability of its nuclear forces. Meanwhile, the United States is reluctant to assure Beijing that it does not seek to undermine China's deterrent, partly because of concerns about China's ongoing nuclear modernization. A program of mutual strategic reassurance between China and the United States is, therefore, a first-order priority. The Obama administration, like its predecessor, has tried hard to initiate such a process, although so far with limited success. If talks do occur, they will unquestionably prove slow and difficult—but they are supremely important. In the meantime, there is no reason why France and the UK could not participate in data exchanges without Chinese involvement. Doing so might usefully put international pressure on Beijing to start the slow process of strategic engagement.

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The daunting challenges of the next round of U.S.-Russia arms control negotiations need not paralyze the arms reduction process. Within just the next few years, a range of steps to reduce nuclear dangers and help pave the way toward deep reductions could be implemented. A few of these steps—those that relate to the United States' own nuclear posture—can and should be implemented by Washington unilaterally. Other steps—bilateral confidence-building measures with Russia and a multilateral transparency regime—require the involvement of other states. Whether these states are willing to take part remains to be seen. To ascertain whether they are, the United States should put

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concrete suggestions on the table and challenge others to engage. If they do, the United States will have succeeded in starting the long process toward a world with far fewer nuclear weapons; if they do not, it will have demonstrated to the whole international community that, contrary to popular belief, the real barriers to progress in disarmament do not reside in Washington.

## Notes

- 1 “Gates Hints Budget Constraints Might Force Cuts to Nuclear Arsenal,” Global Security Newswire, May 24, 2011, [http://gsn.nti.org/gsn/nw\\_20110524\\_1911.php](http://gsn.nti.org/gsn/nw_20110524_1911.php).
- 2 Hans M. Kristensen and Robert S. Norris, “Russian Nuclear Forces, 2011,” *Bulletin of the Atomic Scientists*, vol. 67, no. 3 (May/June 2011): 68. The SS-18, SS-19 and SS-27 Mod 1 are all silo-based ICBMs.
- 3 See, for example, Janne E. Nolan, *An Elusive Consensus: Nuclear Weapons and American Security After the Cold War* (Washington, D.C.: Brookings Institution Press, 1999), chapter 3.
- 4 Hans M. Kristensen and Robert S. Norris, “U.S. Nuclear Forces, 2011,” *Bulletin of the Atomic Scientists*, vol. 67, no. 2 (March/April 2011): 74–5. This figure excludes the nuclear-armed Tomahawk land-attack missiles, all of which are set to be retired.
- 5 Kristensen and Norris, “Russian Nuclear Forces, 2011,” 68.
- 6 “Russia to Develop New Heavy ICBM by 2020,” RIA Novosti, December 20, 2010, <http://en.rian.ru/russia/20101220/161856876.html>.
- 7 Stephen Young and Lisbeth Gronlund, “The Cart Before the Horse: DOE’s Plan for the Future of the U.S. Nuclear Weapons Complex,” Working Paper, Union of Concerned Scientists, May 2008: 8, [www.ucsusa.org/assets/documents/nwgs/cart-before-the-horse-ucs-final-050508.pdf](http://www.ucsusa.org/assets/documents/nwgs/cart-before-the-horse-ucs-final-050508.pdf).
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- 9 Quoted in Cheryl Pellerin, “New START Treaty to Take Effect Feb. 5,” American Forces Press Service, February 2, 2011, [www.defense.gov/news/newsarticle.aspx?id=62656](http://www.defense.gov/news/newsarticle.aspx?id=62656).

## Further Reading

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