Next Steps on Strategic Stability and Arms Control With Russia

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The United States and Russia must renew and deepen strategic stability dialogue to address the increasingly complex array of capabilities and technologies that could exacerbate military competition and raise the risk of nuclear use. This array includes not only nuclear capabilities but also dual-capable delivery vehicles and hypersonic technologies, conventional prompt-strike systems, missile defense and the offense-defense relationship, cyber capabilities, and military activities in outer space.

Reinvigorated dialogue should lead to new agreements, understandings, and practices to tamp down dangerous competition and enhance mutual security. This cannot be accomplished in a single treaty or agreement but will require comprehensive dialogue on strategic stability that addresses issues in different baskets in parallel. The United States and Russia must change the tone and direction of the bilateral nuclear relationship to signal a renewed commitment to reducing the role and number of nuclear weapons, ensuring a healthy nuclear non-proliferation regime, and reducing the risks of nuclear use bilaterally and globally.

To maintain mutual restraints and verification and achieve further reductions in U.S. and Russian nuclear forces in the future, it will be necessary to address a broader range of factors and military capabilities than has been the case to date.

Background: The Need for Purposeful Strategic Stability Dialogue

The deterioration in relations with Russia, absence of meaningful dialogue on avoiding crises and maintaining stability, erosion of arms control agreements, and the advance of new technologies have dramatically increased the risk of conflict and of unintended escalation to the use of a nuclear weapon. As the two countries with more than 90 percent of the world's nuclear weapons, the United States and Russia have a mutual obligation to manage and restrain their military competition and reduce the potential for a nuclear exchange.

Despite significant ongoing tensions, it is essential to build on the long history—dating back to the Cold War—of bilateral dialogue and agreements to reduce nuclear risks. For 50 years, the United States and Russia have judged it to be in their mutual interest to adopt legally binding verifiable treaties to limit and reduce their strategic nuclear forces. These agreements—from SALT I in 1969 to the New START Treaty today—put bounds on their competition in the most destructive nuclear forces, provide predictability, and help reduce the risk of nuclear war. These agreements have contained essential provisions for verification, including intrusive on-site inspections, to provide confidence that any militarily significant cheating would

not go undetected. While some believe that the era of such legally binding arms control treaties is over, I and others believe it is still both preferable and possible to negotiate and ratify legally binding verifiable agreements to limit and reduce U.S. and Russian nuclear forces, and, eventually, forces of other nuclear powers too.

Given today's escalating risks, it is essential to renew and deepen discussions to address the increasingly complex array of capabilities and technologies being pursued by each country that could exacerbate military competition and raise the risk of nuclear use by accident or blunder. Renewed dialogue should address nuclear capabilities as well as dual-capable delivery vehicles and hypersonic technologies, conventional prompt-strike systems, missile defense and the offense-defense relationship, cyber capabilities, and military activities in outer space. These topics must be included in a reinvigorated U.S.-Russia dialogue on strategic stability that ideally should lead to new agreements, understandings, and practices to tamp down dangerous competition and enhance mutual security. Such disparate challenges cannot all be addressed in a single treaty or agreement, but because they are interrelated—and likely to become more so over time—a comprehensive dialogue on strategic stability must begin to identify and chart a course toward addressing many of these key factors.

Since the New START Treaty was negotiated in 2010, the United States and Russia have identified issues and concerns they believe need to be addressed in future agreements. The United States points to Russia's numerical advantage in non-strategic nuclear weapons (NSNW) and its pursuit of new strategic-range nuclear delivery vehicles, some of which (e.g., the Poseidon nuclear-powered, nuclear-tipped torpedo and the Burevestnik nuclear-powered, nuclear-armed subsonic cruise missile) would not, if they are deployed, meet the definition of a "strategic offensive arm" under New START. In the context of the demise of the Intermediate-Range Nuclear Forces (INF) Treaty, the United States has expressed concerns about Russia's nuclear-capable intermediate-range land-based delivery systems. Russia, meanwhile, has for years stated that for it to consider reductions below the levels in New START, other factors affecting strategic stability should be taken into account, including missile defense, conventional prompt-strike capabilities, and militarization of space. Russia, and more recently the United States under the Trump administration, has at times argued that future reductions will require bringing other nuclear powers into the arms control process. There also is growing focus on both sides on hypersonic capabilities and cyber risks to nuclear command-and-control systems.

To maintain mutual restraints and verification and achieve further reductions in U.S. and Russian nuclear forces in the future, it will be necessary to address a broader range of factors and military capabilities than has been the case to date. This is unlikely to be accomplished in one comprehensive agreement, but more likely by agreeing to discuss the various issues in several different baskets in parallel. Any ensuing agreements likely will take different forms and proceed on different timelines.

The need for flexible approaches and forms of agreement in addition to treaties could result, for instance, in unilateral or reciprocal actions and commitments, norms or rules of the road, or transparency measures. In addition, because of the pace of technological change, it may be preferable for the time frame of agreements, whatever form they may take, to be more limited—perhaps five or 10 years in some cases—rather than the longer or unlimited duration of some previous agreements. To the extent possible, agreements should include mechanisms for updating to account for new technologies and changed circumstances.

As the countries with the largest nuclear arsenals by far, the United States and Russia should continue addressing many of these issues on a bilateral basis. It may be possible, however, to include China and other nuclear powers in discussions and potentially agreements pertaining to some of these issue baskets, such as those addressing new technologies, either simultaneously or after the United States and Russia have made some progress.

Even before any specific new measures or agreements are reached, there is an urgent need for the United States and Russia to change the tone and direction of the bilateral nuclear relationship to signal a renewed commitment to reducing the role and number of nuclear weapons, ensuring a healthy nuclear nonproliferation regime, and reducing the risks of nuclear use bilaterally and globally. The agreement in February 2021 to extend the New START Treaty for five years was a welcome first step in that direction.

Building on the Foundation of the New START Treaty

The New START Treaty, now extended to February 5, 2026, is the starting point and foundation for future arms control and other strategic stability measures with Russia. The treaty limits the number of U.S. and Russian deployed strategic nuclear warheads to 1,550 and their deployed delivery vehicles (referred to as "strategic offensive arms") to 700. It provides for robust verification, including extensive and regular exchanges of notifications regarding the status and location of strategic offensive arms, as well as 18 on-site inspections annually in each country.

By agreeing with Russia to extend the treaty—which otherwise would have expired on February 5, 2021—the United States ensured that Russia's new Avangard hypersonic delivery vehicles deployed on ICBMs and the Sarmat heavy ICBMs will be subject to the treaty when they are deployed. Two other novel long-range nuclear systems Russia is pursuing that do not fall under the definitions of the treaty—the Poseidon nuclear-powered, nuclear-tipped torpedo and the Burevestnik nuclear-powered, nuclear-armed subsonic cruise missile—are not likely to be deployed, and certainly not in militarily significant numbers, during the life span of New START. And while New START does not limit Russian (or U.S.) NSNW, the treaty's limits on strategic weapons and its verification provisions provide a critical foundation for the extremely difficult endeavor of negotiating an agreement with Russia to cover classes of weapons beyond what is included in New START.

Recommendations for Next Steps in Arms Control and Strategic Stability

For the purposes of this paper, the term "nuclear arms control" is used flexibly and is meant to encompass legally binding treaties and agreements and other forms of agreement through which the United States and Russia might reduce nuclear risks through mutually agreed actions or commitments. The extension of New START ensures continued limits and verification on the most destructive class of deployed nuclear weapons in the U.S. and Russian arsenals while the two countries begin to scope out and negotiate additional agreements and measures that can complement and endure beyond New START.

This paper does not address all the issues in the bilateral strategic stability basket. It focuses primarily on further nuclear reductions and a potential successor regime to New START that could include hypersonic, novel, and conventional prompt-strike capabilities; a ban on INF-range systems; and transparency and limits on non-strategic and non-deployed nuclear warheads. (Other important issues related to strategic stability, including the offense-defense relationship, are discussed in separate papers.)

The key recommendations for future arms control steps by the United States, discussed in greater detail below, include:

- Announce plans to deploy no more than 1,400 strategic warheads by the end of 2021.
- Negotiate a new bilateral treaty to further limit and reduce U.S. and Russian strategic systems.
- Agree with Russia not to base U.S. or Russian land-based intermediate and shorter-range ballistic and cruise missiles in Europe (west of the Urals).
- Negotiate agreements to address non-strategic and non-deployed nuclear warheads through transparency, numerical limits, and locational restrictions.

1. Announce Plans to Deploy No More Than 1,400 Strategic Warheads by the End of 2021

The United States should announce its intention to reduce its deployed strategic warheads to no more than 1,400 (fewer than the treaty's ceiling of 1,550) by the end of 2021 and invite Russia to take a reciprocal step. This would send an unmistakable signal of the U.S. commitment to build on the foundation of New START and provide an invitation to Russia to join in recommitting to constructive engagement on nuclear arms control and reducing nuclear risks. By the same token, it is a modest enough step that it would not adversely affect U.S. national security even if Russia does not reciprocate since New START's binding limits and verification remain in place. (For the past few years, both the United States and Russia have maintained deployed strategic nuclear forces at levels below the New START limits.) Finally, it would be a welcome and reassuring step in the eyes of the international community as nations prepare to participate in the 10th Nuclear Non-Proliferation Treaty (NPT) Review Conference and look to the nuclear weapons states—first and foremost the United States and Russia—to demonstrate their continued commitment to the disarmament process.

2. Negotiate a New Bilateral Treaty to Further Limit and Reduce U.S. and Russian Strategic Systems

The United States and Russia should begin now to negotiate a new treaty to supersede New START before it expires in 2026. This successor agreement should retain limits and verification on the ICBMs, submarine-launched ballistic missiles (SLBMs), and heavy bombers covered by New START and cover new strategic systems being pursued by both sides. This should include limiting or, in some cases, banning new or novel kinds of strategic-range nuclear delivery systems—such as Russia's Poseidon (a nuclear-powered, nuclear-tipped torpedo) and Burevestnik (a nuclear-powered, nuclear-armed subsonic cruise missile)—that do not meet New START's definition of a "strategic offensive arm," as well as other strategic-range systems, including hypersonic vehicles, whether or not they are deployed with nuclear weapons. The result would be that all so-called strategic-range "conventional prompt global strike systems" would be included in the treaty's limits.

New START and all previous strategic nuclear arms control treaties with Russia have limited and counted all warheads (or reentry vehicles) attributed to ICBMs and SLBMs as nuclear warheads, regardless of whether they actually are nuclear. Applying this counting rule to all strategic-range delivery systems that are subject to a new agreement would help to address the concern that even conventionally armed, strategic-range, fast-flying, highly accurate systems—such as ballistic or cruise missiles or new hypersonic vehicles—have strategic effect and should be limited because they put at risk the nuclear forces and command-and-control and warning systems of the other side.[1]

Counting Rules

The next treaty should employ more accurate counting rules for nuclear warheads attributed to heavy bombers so that the overall numerical limit on nuclear warheads better reflects the actual nuclear capability of each side. While New START precisely counts the warheads deployed on ICBMs and SLBMs, it uses an attribution rule for heavy bombers such that each bomber counts as having just one nuclear warhead. That is far from realistic because U.S. and Russian bombers can carry up to 12–16 nuclear bombs or cruise missiles.[2] Thus, even if the aggregate numerical limit on warheads in a new treaty is not significantly lower than that in New START, adopting more accurate counting rules would lead to a reduction in the actual numbers of warheads and ensure a more meaningful representation of the limit that is being placed on each side's nuclear delivery capacity.

This is particularly important given that the United States and Russia each are developing new air-launched, long-range nuclear cruise missiles and may pursue long-range, air-delivered hypersonic vehicles in the future. There are significant concerns that such capabilities will be destabilizing because they could pose a first-strike threat to certain key command-and-control facilities. Counting them accurately under an overall warhead limit (or banning them entirely) will be a means of imposing some restraint on these capabilities.

The limits of the next treaty should result in reductions in strategic nuclear capability below the levels permitted under New START. However, including additional kinds of delivery systems under those limits (including potentially strategic-range *conventional* delivery systems) and adopting more accurate counting rules for warheads attributed to heavy bombers make it difficult at this stage to make a precise recommendation for the limits of the next treaty. It would be an "apples to oranges" comparison with the New START limits. The point would be to more completely include and limit the actual strategic forces on each side and to ensure the numerical reduction of those forces and particularly of deployed strategic nuclear warheads. In addition, robust verification measures will be an essential element of the next agreement, just as they were with New START and previous agreements.

With the priority of reducing the risk of nuclear use, particularly in this age of new technologies including cyber and hypersonics, arms control agreements should be used to encourage each side to adopt more stabilizing nuclear force postures in addition to reducing and regulating the number of nuclear weapons and delivery vehicles.

Stability and Force Structure

With the priority of reducing the risk of nuclear use, particularly in this age of new technologies including cyber and hypersonics, arms control agreements should be used to encourage each side to adopt more stabilizing nuclear force postures in addition to reducing and regulating the number of nuclear weapons and delivery vehicles. Previous strategic arms control treaties have included provisions intended to encourage each side to adopt more stabilizing force postures. This was the rationale, for instance, behind the original START Treaty's ban on heavy ICBMs with multiple independently-targeted re-entry vehicles (MIRVs). By the time New START was negotiated, however, each side placed higher priority on preserving its own flexibility than on imposing force structure constraints on the other side. It is time to revisit this trade-off for the next agreement. A meaningful dialogue with Russia regarding how each perceives the impact on strategic stability of particular types of weapons systems would help identify areas where restraint could be mutually beneficial. This can be accomplished by symmetrical constraints, as well as through asymmetrical constraints that reflect trade-offs according to each side's security concerns, force structures, and preferences regarding how to distribute the permitted elements of its nuclear force posture.

For example, land-based ICBMs, particularly those in fixed silos, are uniquely vulnerable to a possible first strike and create extreme pressure on leaders to "use them or lose them" in a crisis or in the event an incoming attack is detected. This dynamic is exacerbated when it comes to MIRVed ICBMs given that they are "lucrative" targets with more warheads at risk in the event of a first strike. With the goal of improving stability and increasing decision time in a crisis, a new treaty could ban all silo-based ICBMs or, at a minimum, all MIRVed silo-based ICBMs. Because Russia relies more on its land leg than does the United States, Russia likely would seek to retain at least its mobile ICBM force. Recognizing this, a new agreement could require deMIRVing of all ICBMs, including mobiles, or at least limit the number of warheads permitted on mobile ICBMs to, for instance, no more than three. This would make mobile ICBMs less attractive targets and thus reduce the value in trying to locate and take them out in a crisis.

For other systems perceived as particularly destabilizing, the United States should seek to avert their deployment and ban them in the next agreement. This could include the new Russian Poseidon and Burevestnik systems—high-risk, doomsday systems prone to catastrophic accident or miscalculation. Such a ban would be similar to some of the prohibitions in the original START Treaty on deploying strategic nuclear systems undersea or using other exotic basing and delivery modes. Similarly, strategic-range hypersonic vehicles could be banned or permitted only for deployment on ICBMs. Russia may have its own list of concerns about U.S. systems under development. Short of bans, there could be sublimits on certain systems such as hypersonic weapons or air-launched cruise missiles within the overall treaty ceilings.

3. Agree Not to Base U.S. or Russian Land-Based Intermediate and Shorter-Range Ballistic and Cruise Missiles in Europe (West of the Urals)

With the termination of the INF Treaty in August 2019 following the U.S. determination (shared by the Obama and Trump administrations but denied by Russia) that Russia violated the treaty by deploying land-based intermediate-range (nuclear capable) cruise missiles (the 9M729) that exceeded the range permitted by the INF Treaty, the U.S.-Russian global ban on intermediate- and shorter-range (500–5,500 kilometer) land-based ballistic and cruise missiles has been eliminated and there now are no constraints on this class of missiles. After withdrawing from the INF Treaty, the Trump administration began the development of new missiles in this range for possible deployment in Europe or Asia, saying they would be conventionally

armed. No allies in Europe or the Asia-Pacific have indicated a willingness to host such missiles. Russia has proposed to the United States and NATO a moratorium on deploying this class of missiles in Europe and, while not conceding that the Russian 9M729 cruise missile is INF-range, has more recently offered to include the 9M729 missile in the moratorium.

The United States and Russia should stop this incipient arms race in its tracks by agreeing not to deploy this class of missiles in Europe west of the Urals and working out the terms of the agreement and appropriate verification and transparency measures to confirm mutual adherence. In doing so, the United States should consult closely with its NATO allies, including on potential transparency measures at the NATO missile defense sites in Romania and Poland to demonstrate to Russia that the United States has not deployed offensive missiles at those sites in place of missile defense interceptors (a concern Russia has raised). While a ban or moratorium would be the most immediate path toward reestablishing a prohibition on INF-range missiles in the Euro-Atlantic region, consideration also could be given to codifying a prohibition on this class of delivery vehicles in the next treaty limiting strategic offensive arms.

Reestablishing the prohibition on deployment in the Euro-Atlantic region is important because INF-range systems are particularly destabilizing owing to their short time of flight and the risk that they could be used to initiate a nuclear exchange or lead to nuclear escalation even if conventionally armed. They also raise concerns about miscalculation because they are dual-capable systems. For these reasons, it is not beneficial to the security of the United States or its NATO allies for this class of systems to remain unregulated. (Nor should the United States pursue deployment of land-based INF-range missiles on the territories of its allies in Asia, as discussed in a separate paper on strategic stability with China.)

4. Negotiate Agreements to Address Non-Strategic and Non-Deployed Nuclear Warheads through Transparency, Numerical Limits, and Locational Restrictions

Historically, nuclear arms control agreements between the United States and Russia have limited only deployed strategic nuclear warheads and delivery vehicles of strategic- and INF-range. Nuclear warheads intended for deployment on non-strategic delivery systems (NSNW) and other non-deployed nuclear warheads have not yet been subject to arms control agreements. Future arms control agreements should increasingly focus on all types of nuclear warheads to facilitate limits and reductions across the full range of nuclear capability, reduce breakout potential, and enhance verification, particularly as nuclear stockpiles are further reduced.

In the United States there is increasing interest in limiting Russia's NSNW in future arms control arrangements owing to Russia's larger stockpile of NSNW and the concerns of NATO allies about Russia's NSNW near Europe. The Senate resolution of ratification for New START called on the United States to seek negotiations with Russia on NSNW. The Obama administration endeavored to do so, but Russia showed no interest. While the Trump administration in its final months sought to leverage a proposed one-year extension of New START in exchange for Russian agreement to freeze total warhead stockpiles (with details, definitions, and verification to be worked out later), Russia did not agree to that proposal.

The main concern with respect to Russia's NSNW is their availability for use in the European theater on tactical (and now also on INF-range) systems where they can threaten U.S. allies and partners. Given their close proximity—and resulting very short delivery times—to allies' territory, these systems are viewed as particularly threatening to European allies with potential to be used early in a conflict and lead to escalation

to large-scale nuclear exchange. Similarly, U.S. forward-based nuclear weapons in Europe concern Russia because of the short time of flight from Europe to Russian territory. Those European bases where U.S. nuclear weapons are stored would be early targets in a conflict, risking nuclear escalation. Therefore, it would be stabilizing to mitigate these concerns through agreements that could enhance transparency, establish numerical limits, and provide verifiable locational restrictions on where Russian and U.S. NSNW may be stored.

Just as the United States has been concerned with Russia's numerical advantage in NSNW, which are not deployed on a day-to-day basis, Russia has at times expressed concern about the greater capacity of the United States to "upload" additional nuclear warheads on its strategic delivery systems. One mutually beneficial way of addressing U.S. and NATO concerns about NSNW and Russia's concerns about a perceived U.S. advantage in non-deployed strategic warheads could be to address in an agreement all non-deployed nuclear warheads, or the total warhead stockpile, of each side.

The next phase of nuclear arms control with Russia should begin to grapple with this challenge. Doing so will be difficult in part because the U.S. and Russian nuclear warhead stockpiles and operational practices are asymmetrical and because there are national security sensitivities related to the design, life cycle, and operational practices pertaining to nuclear warheads. Verification measures, if pursued, will be technically difficult to develop and raise important national security considerations. Moreover, the United States and Russia do not yet have shared objectives in this area, so finding common ground will not be easy. Progress on the U.S. objective of limiting Russian NSNW may require trade-offs across other issues in the strategic stability basket.

Below are two illustrative approaches to consider for increasing transparency and/or limiting non-strategic and non-deployed nuclear warheads. (A third approach regarding locational restrictions on U.S. and Russian NSNW in Europe west of the Urals is discussed in a separate paper.) These approaches are complementary—the two sides could pursue one or more of them and they could be advanced together or sequentially.

- **A transparency agreement on total nuclear warhead stockpiles**—As a precursor to more ambitious agreements to limit and verify warhead stockpiles, the United States and Russia could agree to increase transparency on warhead stockpiles through declarations. This can be done at varying levels of detail and specificity, for instance by providing some or all of the following information:
  - total number of active and reserve warheads and those awaiting dismantlement
  - numbers, types, and location of warheads associated with strategic systems
  - numbers, types, and location of warheads associated with non-strategic systems

  Such declarations could be made as unilateral, reciprocal confidence-building measures, or they could be incorporated into agreements that also include measures for transparency, confirmation, and verification as a first step toward, or in conjunction with, agreed numerical or geographic limits and restrictions.

- **An aggregate limit on total nuclear warhead stockpiles**—One way to address concerns about Russia's numerical advantage in non-strategic nuclear warheads would be to agree on an overall limit on aggregate nuclear warheads on each side. The United States in March 2018 publicly

declared its total nuclear stockpile to be 3,822 warheads. (This includes active deployed and non-deployed warheads and warheads in reserve but does not include warheads in the dismantlement queue.) Russia's total stockpile is estimated in unofficial unclassified sources to be about 4,300.[3] The aggregate numbers on each side are not so far off from each other. Thus, agreement on an aggregate limit with "freedom to mix" (i.e., Russia could maintain more NSNW than the United States, while the United States maintains more non-deployed strategic warheads than Russia) could be feasible, imposing a limit and forcing trade-offs between the categories of warheads. An alternative would be for both sides to agree to freeze their warhead stockpiles at the current level, as the Trump administration proposed. Under either approach—an agreed numerical limit or a freeze—it would be necessary to define precisely what will be counted under the agreement and to determine what if any verification procedures would be developed and implemented.

Conclusion

The ideas suggested in this paper for a) a potential successor regime to New START that would cover a more comprehensive array of strategic-range nuclear and conventional systems and new technologies; (b) a moratorium on INF-range missiles; and (c) transparency and limits on NSNW and non-deployed nuclear warheads represent an important but incomplete set of proposals to address key factors that are affecting strategic stability between the United States and Russia. Other important issues such as the offense-defense relationship and additional considerations regarding the risks of NSNW in Europe are discussed separately in this volume. Additionally, there are subjects including cyber risks to nuclear command-and-control and warning systems, implications of artificial intelligence, and military activities in space that, while not discussed in detail in this report, are critical issues for inclusion in a wide-ranging and in-depth strategic stability dialogue with Russia.

Endnotes

1 At the end of the New START negotiations, the United States made a unilateral statement (never agreed by Russia) that any long-range conventional-only (e.g., not dual-capable) prompt-strike weapons it deployed would not be subject to New START's limits. That statement was incorporated as a condition of the Senate resolution of ratification. The United States is no longer pursuing the system it had in mind for this exception. In a future agreement, it will be important to have a shared understanding of whether the covered delivery systems include those that are conventional-only as well as those that are nuclear or dual-capable. The preferable approach for strategic stability would be to count them all as covered strategic-range delivery systems, with the continued exception of conventional-only converted heavy bombers.

2 The discounted counting rule in part reflects that since the end of the Cold War, neither country keeps nuclear weapons loaded on its bombers on a day-to-day basis, and the bombers are also used for conventional missions. Previous treaties such the original START Treaty used attribution rules that more accurately reflected the actual nuclear loading capacity of each bomber type.

3 Federation of American Scientists, *Status of World Nuclear Forces*, September 2020. Available at: https://fas.org/issues/nuclear-weapons/status-world-nuclear-forces/.