MUTUALLY ASSURED DIVIDENDS

THE CASE FOR NEW START EXTENSION
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New START is the last remaining nuclear arms control treaty between Russia and the United States—the world’s two largest nuclear powers. The treaty, which entered into force in 2011, will expire in February of 2021 if it is not extended or replaced. This report seeks to examine the dangerous implications and opportunity costs of losing New START and offers concrete policy solutions that would decrease the likelihood of these outcomes and promote a safer and more peaceful world.

Since the 1960s, nuclear arms control treaties have decreased nuclear weapons stockpiles, reduced the threat of nuclear war, and increased cooperation and transparency. After the Cold War, nuclear arms control treaties have increasingly included comprehensive transparency measures and robust verification processes that helped build trust between the U.S. and Russia.

New START’s monitoring and verification regime provides transparency into current Russian nuclear forces and predictability about the future size and structure of those forces. These methods of information sharing are also cost-effective, preventing an additional burden on U.S. intelligence resources.

Similarly, the current modernization plan for upgrades to the American nuclear arsenal is deeply intertwined with U.S. participation in New START. Without the treaty in place, possibilities open up for spending far more on expensive and ultimately redundant force structure. If Russia also uses the loss of treaty restrictions as an opportunity to increase its nuclear stockpile, the U.S. could follow in pursuit of parity or overmatch—resulting in a renewed arms race.

NATO and European allies have communicated their desire to avoid a new arms race by extending New START through 2026. Likewise, President Putin and various Russian officials publicly stated their willingness and cooperation to ensure an extension. However, the Trump administration shows little interest in continuing with the treaty without negotiating what they deem a better deal—one that would include China. But delaying and endangering the extension of New START gives negotiators an improbable mission on an impossible timeline.
A looming deadline approaches in bilateral arms control: the New Strategic Arms Reduction Treaty (New START) is set to expire in February 2021. New START is the continuation of a long line of arms control agreements that successfully reduced the number of nuclear weapons on the planet. It is of paramount importance to extend the treaty so that the U.S. and Russia have the requisite time to craft and negotiate the next iteration of bilateral arms control.

New START was signed by the United States and Russia on April 8, 2010, with ratification by the U.S. Senate on December 22, 2010. The Russian parliament, both the Duma and the Federation Council, approved the treaty in January 2011, thus entering it into force on February 5, 2011.

Nuclear arms control treaties allow for predictable interactions between U.S. and Russian strategic nuclear forces, thus reducing the risk of war and arms racing. Additionally, New START fulfills both the U.S. and Russian obligations to work toward complete disarmament under the Treaty on the Non-Proliferation of Nuclear Weapons (NPT).

**HISTORY OF NUCLEAR ARMS CONTROL**

During the Cold War, arms control agreements were constructed to save the world from nuclear destruction. As shown in Figure 1, each arms control treaty corresponds with a decrease in U.S. and Russian nuclear weapons stockpiles.

Beginning with the Limited Test Ban Treaty in 1963 that banned nuclear explosions in the atmosphere, outer space, or underwater, the effort to limit nuclear fallout required significant cooperation on restrictions to nuclear capabilities of each party.

Cooperation among nuclear-capable states continued with the Nuclear Nonproliferation Treaty (NPT) signed in 1968 to prevent nuclear proliferation and promote disarmament among an increasing number of nuclear-capable states. This treaty is considered the centerpiece of the nuclear nonproliferation regime with 191 states participating, signaling unity among non-nuclear weapons states (NNWS) to not acquire nuclear weapons and nuclear weapons states (NWS) to not facilitate the development of nuclear weapons by any NNWS while promoting the exchange of information and materials for the peaceful uses of nuclear energy. The United States has led dialogue between NWS to coordinate on advancing transparency measures and promoting steps toward disarmament, indicating traditional U.S. leadership in nuclear diplomacy and cooperation.

The Nixon administration contributed greatly to the shift toward detente with the then-Soviet Union and instituted an era of strategic nuclear arms limitations. During the Strategic Arms Limitation Talks (SALT I) negotiations from 1969 to 1972, the U.S. and the USSR agreed not to construct new Intercontinental Ballistic Missile (ICBM) silos or increase their size and capped the number of Submarine-Launched Ballistic Missile (SLBM) launch tubes and SLBM-carrying submarines. The SALT talks also limited strategic missile defenses to 200 (and later 100) interceptors each through the Anti-Ballistic Missile (ABM) Treaty. This was a significant development in arms control between the U.S. and Soviet Union as it obligated each nation not to develop, test, or deploy space-, sea-, or air-based ABM systems or components, while also limiting the number of qualitative limits on missile defense programs.

The Reagan administration continued the legacy of U.S. arms control in 1982 through initial negotiations of START. This treaty aimed to limit overall warhead counts to 6,000 and delivery vehicles to 1,600 in order to reduce the number of nuclear weapons in the worldwide stockpile. The START structure served as an important benchmark in U.S.-Russian arms control as it introduced more robust and comprehensive monitoring and verification with telemetry exchanges and on-site inspections.

Meanwhile, the Intermediate-Range Nuclear Forces (INF) Treaty in 1987 sought to eliminate ground-launched, mid-range nuclear missiles from U.S. and Russian strategic forces. INF continued the aims of reducing nuclear arms, implementing important and comprehensive verification measures, while also promoting European strategic security.

President George HW Bush’s administration finalized START in 1991, which came into force in early 1994 during the Clinton administration, until it expired in 2009. START contained a complex verification regime, in which both sides collected most of the information needed to verify compliance with their own satellites and remote sensing equipment, while also using data exchanges, notifications, and on-site inspections to attain further insight into forces and activities limited by the treaty.

**START was a significant development in nuclear transparency between former Cold War adversaries, with measures designed to empower each nation with the ability to detect any violations and deter cheating, thus building confidence and encouraging trust and openness.**
Sources: Our World In Data\textsuperscript{93} and Federation of American Scientists\textsuperscript{94}
START was a significant development in nuclear transparency between former Cold War adversaries, with measures designed to empower each nation with the ability to detect any violations and deter cheating, thus building confidence and encouraging trust and openness.

The second Bush administration negotiated the Strategic Offensive Reductions Treaty (SORT), or the Moscow Treaty, to reduce the U.S. and Russia’s nuclear warheads to between 1,700 and 2,200 by the end of 2012, however it did not contain a monitoring and verification scheme, instead relying on that of START.

In 2009, the Obama administration called for further negotiations between the U.S. and Russia to replace the expiring START agreement. The preliminary steps to continue reducing U.S.-Russian strategic forces and create greater confidence-building measures began with a framework that would cut Russian and U.S. nuclear arsenals within a range of between 1,500 to 1,675 strategic warheads and 500 and 1,100 delivery vehicles. New START was built on this existing model, and the Senate ratified the treaty to set a 30 percent reduction on deployed warheads and lower caps on deployed and non-deployed ICBMs, SLBMs, and heavy bombers equipped for nuclear weapons.

WOMEN’S IMPACT ON NEW START

Women make up only a small portion of traditional peace negotiation delegations, but the success and longevity of those negotiations appear tied to women’s participation in the process. Data collected from the United Nations and the Council on Foreign Relations (CFR) show that from 1992 to 2018, women made up only 3 percent of mediators, 4 percent of signatories, and 13 percent of negotiators. But when women participate in peace processes, whether it be conflict prevention or resolution, the International Peace Institute (IPI) has shown that the resulting agreement is “35 percent more likely to last at least 15 years.”

Nuclear diplomacy, arms control, and nonproliferation are all ultimately agreements focused on conflict prevention between major powers capable of extracting disastrous costs from each other. Therefore, we can use similar research, like the IPI longitudinal study and CFR case studies involving war and conflict resolution in Myanmar, Afghanistan, and the Philippines, to infer the benefits of women’s substantive participation in arms control.

As in other areas, these diplomatic efforts benefit from diversity and the inclusion of women at the table. Michèle Flournoy, the founder and CEO of the Center for New American Security and former Undersecretary of Defense for Policy, fought for more leadership pathways for women in government. She notes that, as a healthy democracy, you want your national security cadre to look like America. As a matter of performance, all of the business literature suggests that organizations with more diverse teams make better decisions. In the business world, they’re actually shown to be more profitable, higher performance.

A study by New America found that from 1970 to 2019, women held only 12 percent of leadership positions in U.S. arms control policy—with women of color comprising only 2 percent of those positions. These women, though small in number, arguably had an outsized impact on U.S. nuclear policy. President George H.W. Bush included record numbers of women in arms control and European affairs, involving women at the highest levels in negotiating START.

One of the women who negotiated START under the George HW Bush administration took on a new role under the Obama Administration. Rose Gottemoeller served as the undersecretary for arms control and international security at the State Department for almost five years, during which Gottemoeller embraced the role of the chief negotiator for New START in 2009 and 2010. She has spoken extensively about how her gender played a part in her negotiations with the Russian delegation: “The Russians didn’t know what to expect. I was able to use being a woman to cut through the crap.”

Since her time at the State Department, Gottemoeller became the first woman to hold the position of deputy secretary general of NATO. But she remains a vocal advocate for the New START treaty that she negotiated, publishing a clear call to action in the New York Times in November 2019 highlighting the benefits of extension on national security and outlining pragmatic steps to overcome current obstacles.

Other prominent women diplomats have taken to the presses in favor of the treaty. In February 2020 Madeleine Albright, the first woman to become Secretary of State, published “A Plea to Save the Last Nuclear Arms Treaty” with a former Russian foreign minister, Igor Ivanov. The two high-level diplomats highlighted the dangerous costs: “The current state of affairs does not serve the strategic interests of either country, and it puts global security at risk because Russia and the United States are the only countries that possess enough nuclear weapons to destroy each other — and all of humanity.”

Women serving the American public in the highest offices of arms control and nonproliferation steered American nuclear policy for decades, negotiating peace agreements that kept the world’s two largest nuclear arsenals from the brink of nuclear war. Future administrations and the next tranche of emerging diplomats would do well to remember the impact of having women at the negotiating table, and not just as interpreters.
CENTRAL LIMITS OF NEW START AND NATIONAL SECURITY IMPLICATIONS

Since the end of the Cold War, global nuclear stockpiles have radically decreased in an attempt to achieve a more stable and transparent international system. New START implementation allowed for both the U.S. and Russia to reduce their forces over seven years while remaining in effect for a total of ten years.30

Currently, both countries remain in compliance with treaty provisions and their nuclear arsenals stay below New START limits.31 As shown in Figure 2, those limits include no more than 800 deployed and nondeployed land-based ICBMs and SLBM launchers, and deployed and nondeployed heavy bombers equipped to carry nuclear armaments.32 In total, each side cannot maintain more than 700 deployed ICBMs, deployed SLBMs, and deployed heavy bombers equipped to carry nuclear armaments.33 New START limits both the United States and Russia to no more than 1,550 deployed warheads on ICBMs or SLBMs, and one warhead for each deployed bomber.34

According to Madelyn Creedon, former principal deputy administrator of the National Nuclear Security Administration, Department of Energy,35 [New START] is a treaty that does what it does very well: It limits strategic nuclear arms in a verifiable way so as to provide clarity and certainty in the respected strategic arms of each party, thereby preventing an uncontrolled strategic arms race fueled by uncertainty and instability. It allows each side to see the other side as it is, not 20 feet tall and not 2 feet tall.

Madelyn Creedon

New START’s robust monitoring and verification regime provides unprecedented transparency and visibility into existing Russian nuclear forces, as shown in Figure 3. This allows for a cost-effective method to obtain better predictability about the future size and force structure of Russian strategic weapons without over-burdening or dedicating additional U.S. intelligence resources.36

AMERICAN ALLIES’ AND RUSSIAN DESIRE TO EXTEND NEW START

Russian officials have consistently communicated their approval of and willingness to negotiate an extension of New START. President Putin said in Sochi on December 5, 2019 that “Russia is willing to immediately, as soon as possible, before the year is out, renew this treaty without any preconditions.”37 Russian Foreign Minister Sergey Lavrov has reiterated this and, at the end of 2019, President Putin commented on the importance of New START extension saying, “Without the New START there will be nothing left in the world to contain the arms race. I believe that there is nothing good about [that].”38

Russian officials do not want to waste any more time delaying negotiations. Deputy Foreign Minister Sergey Ryabkov emphasized the lost time for negotiation and extension, “If we keep dragging our feet on [extending New START], we might end up under intense time pressure.”39

American allies are likewise anxious to ensure New START’s extension. French President Emmanuel Macron urged New START’s renewal and warned of “the possibility of a pure and unrestrained military and nuclear competition, the likes of which we haven’t seen since the end of the 1960s.”40 Former U.S. Secretary of State Madeleine Albright and Russian Foreign Minister Ambassador Alexander Vershbow, a former U.S. ambassador to Russia, recently wrote,41

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**FIGURE 2**

<table>
<thead>
<tr>
<th>START, Moscow Treaty and New START Central Limits</th>
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<tbody>
<tr>
<td><strong>START</strong></td>
</tr>
<tr>
<td><strong>Warheads</strong></td>
</tr>
<tr>
<td><strong>Delivery Vehicles</strong></td>
</tr>
</tbody>
</table>

Notes: *Includes warheads on deployed ICBMs and deployed SLBMs, and nuclear warheads counted for deployed heavy bombers.

Source: U.S. Department of State95
Global security would be greatly enhanced by extending the New START agreement for another five years. Extension would preserve the last effective and verifiable agreement to limit strategic arms competition with Russia and make it easier to maintain deterrence and strategic stability. It would ensure a high degree of predictability, thanks to the intrusive verification and transparency regime in New START, by reducing uncertainty about Russia’s future force size structure extension and would diminish the worst case assumptions that could drive up the cost of U.S. force modernization and create a lot of high anxiety in many of our allies.

Madeleine Albright
Alexander Vershbow

If New START expires and we enter an unstable era without arms control, the U.S. could receive the brunt of the blame for delaying negotiations and failing to secure an extension. America’s dwindling commitment to arms control agreements adds unnecessary risk to our strategic planning by reducing cooperation and transparency between the world’s largest nuclear powers.

### FIGURE 3

**U.S. and Russian Strategic Nuclear Forces under New START**

<table>
<thead>
<tr>
<th>System</th>
<th>United States</th>
<th>Estimated Forces 2010</th>
<th>Planned Forces Under New START</th>
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<tr>
<td></td>
<td></td>
<td>Launchers</td>
<td>Warheads</td>
</tr>
<tr>
<td>Minuteman III*</td>
<td></td>
<td>450</td>
<td>500</td>
</tr>
<tr>
<td>Trident**</td>
<td></td>
<td>336</td>
<td>1,152</td>
</tr>
<tr>
<td>B-52***</td>
<td></td>
<td>76</td>
<td>300</td>
</tr>
<tr>
<td>B-2***</td>
<td></td>
<td>18</td>
<td>200</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>880</strong></td>
<td><strong>2,152</strong></td>
</tr>
<tr>
<td>Russia</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SS-18 ICBM*</td>
<td></td>
<td>68</td>
<td>680</td>
</tr>
<tr>
<td>SS-19 ICBM*</td>
<td></td>
<td>72</td>
<td>432</td>
</tr>
<tr>
<td>SS-25 (mobile)*</td>
<td></td>
<td>180</td>
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<tr>
<td>SS-27 (mobile)*</td>
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<td>13</td>
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<tr>
<td>SS-27 (silo)*</td>
<td></td>
<td>50</td>
<td>50</td>
</tr>
<tr>
<td>SS-27 mod 2 (mobile)*</td>
<td></td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>SS-27 mod 2 (silo)*</td>
<td></td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>SS-N-18 (Delta III SSBN)**</td>
<td></td>
<td>64 (4 SSBNs)</td>
<td>192</td>
</tr>
<tr>
<td>SS-N-23 (Delta IV SSBN)**</td>
<td></td>
<td>96 (6 SSBNs)</td>
<td>384</td>
</tr>
<tr>
<td>Bulava (Borey SSBN)**</td>
<td></td>
<td>0 (3 SSBNs)</td>
<td>0</td>
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<tr>
<td>Blackjack Bomber***</td>
<td></td>
<td>14</td>
<td>168</td>
</tr>
<tr>
<td>Bear Bomber***</td>
<td></td>
<td>63</td>
<td>688</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>620</strong></td>
<td><strong>2,787</strong></td>
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Notes: * = Land leg, ** = Water leg, *** = Air leg, SSBN: Ship Submersible Ballistic (Nuclear)

Source: Congressional Research Service

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**MUTUALLY ASSURED DIVIDENDS**

**BACKGROUND**

8
The New START verification regime is one of the most comprehensive ever negotiated. It is composed of several provisions including the limits parties must comply with, the monitoring systems that scrape raw data, the analysis process that refines the data collected, and the evaluation phases that determine whether each country remains in compliance. The agreements and monitoring systems in place allow for greater levels of cooperation between the parties and established increasing degrees of confidence in one another’s compliance.

The end of New START would lead to an additional burden on the national technical means of verification (NTM) crucial to monitoring systems. NTM includes photo-reconnaissance satellites, radar installations, and electronic surveillance capabilities.

In the event that New START expires, these kinds of monitoring systems that can gather intelligence from afar would need to compensate for all of the intelligence gathered on-the-ground through treaty-specific means: on-site inspections including visits by inspection teams, manned observation posts outside selected facilities, and sensors at specific locations to monitor activities occurring nearby.

Decades of using and improving the monitoring and verification regime means that losing this on-the-ground intelligence
gathering would alter how many resources each nation must devote to achieving the same level of transparency.

As Figure 4 illustrates, the monitoring and verification regime grew over decades to become more robust and comprehensive through successive nuclear arms control agreements between the U.S. and Russia.

Part of instituting confidence-building between the two parties included expanding the provisions around on-site inspections as within the monitoring system scheme. Initial agreements signed in the 1950s and 1960s called for cooperation in monitoring compliance but did not provide access to territory or military activities as has now become the norm.47

As arms control agreements developed, additional provisions were added beyond NTM and to aid in NTM monitoring that allowed each side to gather a more comprehensive picture of the other’s forces.48 This process counts and measures weapons when they come online, monitors them while they are deployed, and eventually eliminates them as they end their service lives.49 This level of detail minimizes ambiguities and uncertainties that might arise around new, existing, or aging systems.50

With New START, the U.S. now possesses a much greater understanding of the number of missiles in the Russian stockpile than it did in the late 1980s because of the extensive monitoring and verification regime that has allowed these missiles to be counted and monitored for 15 years.51 The regime establishes confidence in the absolute knowledge of Russia’s strategic and tactical weapons and capabilities.52 Such strong monitoring and verification measures also create a strong disincentive for either party to cheat or violate the treaty terms.

NEW START MONITORING AND VERIFICATION

When re-evaluating the START agreement with the goal of creating New START, both Russia and the United States aimed to reduce the cost of assessing treaty compliance.53 Therefore, New START reduced complexities with START’s monitoring and verification regime by creating efficiencies for notifications and inspections and minimizing interference with ongoing military operations, while continuing a high level of transparency and cooperation.54

Russia and America consistently comply with the treaty’s provision for on-site inspections.55 Both countries completed all 18 of their permitted Type 1 and Type 2 inspections during every year of the treaty’s implementation, according to the State Department.56

The inspection activities include confirming the number of reentry vehicles on deployed ICBMs and deployed SLBMs, confirming numbers related to non-deployed launcher limits, counting nuclear weapons onboard or attached to deployed heavy bombers, confirming weapon system conversions or eliminations, and confirming facility eliminations.57 Each side is allowed to conduct ten Type One inspections and eight Type Two inspections annually, described in Figure 5.58 According to the State Department, the U.S. and Russia also exchanged 17,516 notifications by early April 2019, which report on the location, movement, and disposition of strategic offensive arms.59

But gathering data through NTM alone is unlikely to match the level of insight and confidence achieved by data exchanges paired with inspections.60 The utility of “boots on the ground” to confirm Russian information on their strategic arsenal is difficult and expensive to substitute. The U.S. physical presence allows for incredible insight into Russian strategic forces located at those facilities.61 Through this verification regime, the wide range of information willingly provided through the treaty ensures that any significant violations will be detected with enough strategic time to counter these measures.62

OPPORTUNITY COSTS AND SUNK RESOURCES IN INTELLIGENCE

Without this intelligence and insight into Russian strategic nuclear forces and activities, U.S. force modernization, intelligence gathering, and strategic planning would be more costly. In a letter to the Congressional Budget Office (CBO), Senator Bob Menendez (D-N.J.) and Representative Adam Smith (D-Wash.) requested that CBO analyze the costs and consequences of President Trump allowing New START to expire in 2021.63

The congressmen state that “In the absence of those transparency and confidence-building measures in New START (as well as previous treaties), both parties will lose a means to have direct knowledge of their adversary’s capabilities.”64

In the event that New START expires, monitoring systems that can gather intelligence from afar would need to compensate for all of the intelligence gathered on-the-ground through treaty-specific means.
Many of the details associated with annual intelligence expenses are classified and thus unavailable for members of the public to analyze. Over the past decade, the total topline for intelligence spending hovers at around 11 percent of the annual defense budget. The temporary dip shown in Figure 6 tracks along the same trend in overall national defense spending during these years—primarily due to the implementation of the Budget Control Act.

Intelligence spending is divided into two distinct programs: the National Intelligence Program (NIP) and the Military Intelligence Program (MIP). The NIP is an umbrella that covers any intelligence relevant to strategic planning and policymaking, where the MIP covers any planning at the operational and tactical level for the U.S. military. There are 17 distinct components of the intelligence community (IC); the NIP funds all 17, while the MIP funds only Pentagon-specific components.

With the loss of on-the-ground intelligence gathered through on-site inspections and data exchanges between diplomats, the budget for NTM would likely increase in order to scrape more raw data, process that data, and then distribute it to all the relevant stakeholders. During peacetime, this would likely come in the form of increased NIP funding to several specific programs.

The National Reconnaissance Program (NRP) develops, builds, launches, and operates satellites with a variety of intelligence capabilities. The NRP provides the IC with information on “topics like imminent military aggression, early warning of foreign missile launches, battle damage assessments, tracking high-value individuals, and monitoring treaty agreements and peacekeeping operations.”

The Department of Energy and the Department of State both also receive programmatic funding through the NIP every year to provide intelligence analysis related to gathering, processing, and relaying intelligence on nuclear weapons and strategic arms control to relevant policymakers.

Budget estimates for these programs are classified and the percentage of work, and thus costs, devoted to monitoring foreign nuclear arsenals is also classified. But it is eminently possible that with the expiration of New START comes larger budget requests for these operations. The forthcoming CBO report may be able to provide further information on the specific costs associated with the loss of on-site inspections and data exchanges and an increased reliance on NTM.
There are other kinds of costs to consider. If New START expires, the central limits currently in place that dictate the size and structure of the Russian and American nuclear arsenals will also disappear.

Many of the arguments in favor of New START extension highlight the diplomatic dividends from stability in relations or the strategic benefits of fewer nuclear weapons in the world. One of the lesser-explored benefits of New START is the fiscal predictability that it affords both countries.

With New START in place, Russia and America will plan the modernization of their nuclear arsenals around the treaty’s central limits. But if the treaty expires without a replacement on the horizon, three potential outcomes could arise—all with significantly different fiscal consequences. The first would use congressional oversight to keep the status quo intact, the second would continue the Trump administration’s small-scale arms race to diversify the arsenal, and the third would see large increases to the planned buys of any and all nuclear delivery system to maintain parity with Russia in a new large-scale arms race.

Congress could use this opportunity to reassert its oversight role in order to prevent increases in the nuclear weapons modernization program beyond the current plan—called the “program of record.” Already, the U.S. plans to replace or expand the arsenal to reach 12 nuclear ballistic missile submarines (SSBNs), 400 fielded ICBMs, and up to 120 fielded nuclear bombers over the next thirty years, as shown in Figure 7, with a price tag of $1.7 trillion total.

These modernization costs are already on the rise: almost $500 billion in the next ten years.\textsuperscript{68} From 2019 to 2028, CBO estimates that strategic nuclear delivery systems will cost taxpayers $234 billion while tactical nuclear delivery systems will cost $15 billion. The Department of Energy’s nuclear weapons laboratories and their supporting activities will cost $106 billion. All of the command, control, communications, and early-warning systems associated with the nuclear arsenal will cost $77 billion.\textsuperscript{69} The total also includes $62 billion as an estimate of how much the programs will exceed planned costs.

\textbf{FIGURE 7}

\textbf{Costs of Current Program of Record (in FY17 dollars)}

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{costs_of_current_program_of_record.png}
\caption{Costs of Current Program of Record (in FY17 dollars)}
\end{figure}

\textbf{Notes:} NC3 = Nuclear command, control, communications, and early-warning systems.
\textbf{Source:} Congressional Budget Office, using data from the Department of Defense and the Department of Energy.\textsuperscript{100}
The existing modernization plan detailed above is based on maintaining New START’s central limits.

If New START expires, those formal restrictions on the development, production, and deployment of more weapons and delivery systems disappear. But while the administration can change nuclear policy and request additional nuclear force structure, Congress must authorize and appropriate the funds. Members of Congress could resist outside pressure to add to the program of record, effectively maintaining New START levels as a non-codified norm and encouraging Russia to do the same.

While not as formal or verifiable as the existing treaty, this option would keep the U.S. out of a new, costly, dangerous arms race while enforcing the status quo on force structure. While it would not require more funding, it would require considerable political capital on the part of Congress to resist threat inflation on Russian nuclear systems.

A SMALL-SCALE ARMS RACE

Since taking office, the Trump administration pursued a strategy of diversifying the nuclear arsenal to add missions to existing platforms and create more redundancies in the arsenal and ambiguities in the policy. Without New START in place, these piecemeal additions to the force structure could continue or, in the more expensive case, multiply. The White House already proposed three new submarine-based systems and successfully produced and deployed the first—even after facing fierce opposition from Democrats in Congress.

In FY20, Congress funded the deployment of the W76-2, a low-yield nuclear warhead for the Trident D5 submarine-launched ballistic missile (SLBM). Proponents of the W76-2 say that it fills a gap: Russia possesses low-yield nuclear weapons and could use them in a limited nuclear exchange—likely in a proxy war rather than a direct attack on the U.S. homeland.

In regards to the perceived utility of the deployment of W76-2 low-yield nuclear warheads, House Armed Services Committee Chairman Adam Smith (D-Wash.) said, "The Administration’s decision to deploy the W76-2 warhead remains a misguided and dangerous one. The deployment of this warhead does nothing to make Americans safer. Instead, this destabilizing deployment further increases the potential for miscalculation during a crisis. Validating the utility of so-called ‘low-yield’ nuclear weapons in ‘winning’ a nuclear war adds to the growing pressures of a nuclear arms race."

Chairman Adam Smith

Because Russia would not be able to predict whether an incoming missile was carrying low- or high-yield warheads, the W76-2 allows for unintended nuclear escalation by making Russia’s response unpredictable.

Russian Deputy Foreign Minister Sergei Ryabkov said that “the deployment of the W76-2 warhead in the name of strengthening deterrence had caused Russia great concern over U.S. nuclear strategy.”

The Trump administration’s second addition is the Sea-Launched Nuclear Cruise Missile (SLCM). The cost of this weapon’s total development includes about $9 billion from 2019 to 2028, not including any costs for production after 2028 in terms of integrating the SLCM onto submarines or surface ships, or other associated operations or security costs.

The FY21 budget proposal debuted the third new submarine-launched nuclear warhead, named the W-93, which the NNSA is seeking $53 million for its production without releasing its first production unit date. However, little is known about this weapon, which will likely not go into production until 2034.

These three new warheads sought after by the administration follow a distinct trend: a greater diversification of the nuclear submarines’ mission to include more tactical assets. The House of Representatives defunded the W76-2 in its version of the FY20 defense bills but was not able to preserve these cuts once in conference with the Senate. The SLCM and W93 will also likely face strong opposition from legislators, but it’s unclear whether they will prevail.

If these systems are funded and integrated into our force structure, the additions will increase the costs of the modernization plan, and in the long-term produce costs associated with operating and maintaining them. Overall, it would signal a large change in nuclear strategy to embrace more tactical assets, which generate over a $10 billion total increase to the program of record.

A LARGE-SCALE ARMS RACE

The third possible outcome could balloon the nuclear modernization plan’s scope and associated costs, in a worst-case-scenario. The argument to “keep up” with Russian production if they choose to build over New START levels will create huge potential costs for American taxpayers and lead to large redundancies in the nuclear arsenal.

This option seems increasingly likely, especially given American reactions to Russian modernization and its proposed new and “exotic” systems, shown in Figure 8.
The RS-28 (Sarmat) silo ICBM, PAK-DA Bomber, and SS-X-28 ICBM would be considered new types of strategic delivery vehicles if Russia deployed them during New START. If Russia deploys the Avangard system during New START it would either count as an existing type of ICBM or a new type of system if it is deployed outside the treaty definitions of an ICBM.

General Hyten, the commander of U.S. Strategic Command (STRATCOM), expressed concern about Russia’s new nuclear delivery systems in testimony before the Senate Armed Services Committee in February 2019. Specifically on the Poseidon underwater drone, the Burevestnik nuclear-powered cruise missile, the Kinzhal air-launched ballistic missile, and the Tsirkon hypersonic cruise missile—which would not count under New START’s limits. He noted that these weapons could eventually pose a threat to the United States and that he believed the United States and Russia should expand New START so they would count them under the treaty.77

On December 22nd, President Putin commented that Russia is “ready to work out new arms control agreements. But until this process is launched, [it] will continue to strengthen [its] nuclear forces,” in reference to the deployment of Avangard.78

However, in the event that New START expires and Russia continues to ramp up its production of new weapons systems or increase its existing stockpile beyond the former limits, it’s plausible that American policymakers will feel a renewed pressure to keep pace with the Russian arsenal.

Sen. Menendez and Rep. Smith highlighted this potential danger in their letter to the CBO, writing, 79

This situation will lead to potentially destabilizing uncertainty regarding each sides’ forces, and could lead both sides to increase their arsenals to hedge against that uncertainty, which could in turn lead to an arms race like the one we experienced during the Cold War.

Senator Robert Menendez
Chairman Adam Smith

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**FIGURE 8**

**Russian Nuclear Delivery System Modernization Programs**

<table>
<thead>
<tr>
<th>System</th>
<th>Original Deployment Date</th>
<th>Warheads</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>RS-28 (Sarmat) silo ICBM</td>
<td>Early to mid-2020s</td>
<td>10+, nuclear</td>
<td>A multiple-warhead heavy ICBM; intended to overcome missile defense</td>
</tr>
<tr>
<td>PAK-DA Bomber</td>
<td>Mid-2020s</td>
<td>30 ton payload (air-to-surface and air-to air, conventional, smart-guided bombs)</td>
<td>Next generation bomber</td>
</tr>
<tr>
<td>SS-X-28 ICBM</td>
<td>No estimated date</td>
<td>Potentially up to 4, nuclear</td>
<td>Mobile intermediate range ballistic missile</td>
</tr>
<tr>
<td>Avangard HGV</td>
<td>Early to mid-2020s</td>
<td>One per vehicle, nuclear</td>
<td>Can be delivered by SS-18, SS-19, and potentially the Sarmat ICBMs; intended to overcome missile defense</td>
</tr>
<tr>
<td>Poseidon Autonomous Underwater Vehicle</td>
<td>Mid- to late-2020s</td>
<td>Conventional or nuclear</td>
<td>Carried by special-purpose submarines; intended as a second-strike retaliatory weapon</td>
</tr>
<tr>
<td>Burevestnik Nuclear-powered Cruise Missile</td>
<td>Mid- to late-2020s</td>
<td>Nuclear</td>
<td>“Unlimited” range, owing to its nuclear reactor; intended to overcome missile defense</td>
</tr>
<tr>
<td>Kinzhal Air-Launched Ballistic Missile</td>
<td>Begun trial deployment</td>
<td>Conventional or nuclear</td>
<td>Intended to target naval vessels</td>
</tr>
<tr>
<td>Tsirkon Hypersonic Cruise Missile</td>
<td>Mid- to late-2020s</td>
<td>Conventional</td>
<td>Intended to attack ships and ground targets</td>
</tr>
<tr>
<td>Barguzin Rail- Mobile ICBM</td>
<td>Delayed or halted</td>
<td>Potentially up to 4, nuclear</td>
<td>Program reportedly postponed in 2017</td>
</tr>
<tr>
<td>RS-26 Rubezh ICBM</td>
<td>Delayed or halted</td>
<td>Potentially up to 4, nuclear</td>
<td>Program reportedly postponed in 2018; may reappear as an intermediate-range missile after INF Treaty lapses</td>
</tr>
</tbody>
</table>

*Source: Bulletin of the Atomic Scientists*101

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This will lead to potentially destabilizing uncertainty regarding each sides’ forces, and could lead both sides to increase their arsenals to hedge against that uncertainty, which could in turn lead to an arms race like the one we experienced during the Cold War.

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**Senator Robert Menendez**
**Chairman Adam Smith**
Because of the timing in the first outcome, a large portion of the U.S. nuclear arsenal is scheduled for modernization at the same time, as shown in Figure 9.

The development phase is waning for many of the replacement systems, new technologies, and life extension programs. As these systems enter the production phase, it becomes relatively simple for the final unit number for each program to increase or decrease in the outyears. Meaning that the current rate of production would not increase in pace, but production lines could be kept open longer to accommodate larger buys.

While this would not increase costs in the short-term, it would certainly lead to enormous costs in the long-term. Costs are typically highest for the first production unit of any new system, but for some of these programs there have also been follow-on unit costs estimated.

The Columbia-class submarines will cost an average of $6.5 billion per ship and the Navy plans to buy 12 total. The new ICBM breaks down to roughly $53 million per missile with a planned buy of 400 total. The cost-per-unit of the new long-range bomber, the B-21, comes in at $564 million per plane, with the Air Force already planning to buy 100. Additional units bought in the future could feasibly encounter cost increases above these estimates based on development or production delays, as well as the rising cost of inflation.

But adding more units of each specific type of delivery system then requires a similar increase in warheads. Adding more

**FIGURE 9**

**Timelines for current modernization programs by system**

<table>
<thead>
<tr>
<th>Delivery System Life Extensions or Replacements</th>
<th>Development</th>
<th>Production</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trident D-5 Missile Life Extension</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SSBN</td>
<td></td>
<td></td>
</tr>
<tr>
<td>New Ballistic Missile Submarine</td>
<td></td>
<td></td>
</tr>
<tr>
<td>New SLBM</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ICBM</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ICBM Fuze</td>
<td></td>
<td></td>
</tr>
<tr>
<td>GBSD: New ICBM</td>
<td></td>
<td></td>
</tr>
<tr>
<td>GBSD: Infrastructure and Comms.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bomber</td>
<td></td>
<td></td>
</tr>
<tr>
<td>B-61 Tailkit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>B-21 Bomber</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Long-Range Standoff Weapon</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Warhead Life Extensions**

| SSBN                                           |             |            |
| W76                                            |             |            |
| W88 ALT 370                                    |             |            |
| ICBM/SSBN                                      |             |            |
| Interoperable Warhead 1                        |             |            |
| Interoperable Warhead 2                        |             |            |
| Interoperable Warhead 3                        |             |            |
| Bomber                                         |             |            |
| B61-12 Bomb                                    |             |            |
| W80-4 Cruise Missile Warhead                   |             |            |
| Next B61 Bomb                                  |             |            |

Notes: GBSD = Ground-Based Strategic Deterrent; ICBM = intercontinental ballistic missile; SLBM = submarine-launched ballistic missile; SSBN = ballistic missile submarine; * = program continues beyond 2046.

Sources: Congressional Budget Office, Department of Defense, and the Department of Energy

*With New START’s central limits, nuclear modernization will cost nearly $500 billion over the next ten years.*
systems also incurs both fixed and variable downstream costs—fixed costs like additional infrastructure come alongside the variable costs like additional trained personnel and maintenance of the weapons over their service lives.83

Increasing the number of warheads and delivery systems would generate enormous profits for the associated defense companies, but it would also create its own set of problems for the defense industrial base. In many ways, there will also be problems that stack and multiply in some areas of industry. Shipyards can only build so many submarines in a given year, and early indications suggest that shipbuilding capacity may already be strained—causing significant delays, unexpected expenses, and serious deficiencies in the final platforms.84

The Nuclear National Security Administration (NNSA) may be similarly limited in the number of plutonium pits it can produce per year (referred to as PPY). The cost to reach the current 80-pit goal will approach $1 billion a year, according to the CBO.85 This rate of production would ultimately cost roughly $9 billion over the next 10 years.86

In terms of feasibility, according to the Institute for Defense Analysis, meeting the pit production requirement by the DoD and NNSA of 80 ppy by 2030 is extremely challenging given the schedules and budgets currently forecasted, and “pursuing an aggressive schedule creates major risk in achieving an 80-ppy production capability.”87

A new arms race with Russia will be both costly for American taxpayers and complicated for policymakers. On balance, an increase in nuclear weapons modernization or production will have immensely negative impacts on the U.S. defense budget: either requiring far more revenue to cover costs or forcing the services to rethink some of their acquisition projects on the conventional side to cover the arms race while maintaining existing funding levels.

With the loss of on-the-ground intelligence gathered through on-site inspections and data exchanges between diplomats, the budget would likely increase in order to scrape more raw data, process that data, and then distribute it to all the relevant stakeholders.
TIME CONSTRAINTS

The Trump administration has reportedly begun conducting an interagency review of New START to determine whether it continues to serve U.S. national security interests to inform the U.S. approach to the treaty’s extension. Some of the considerations include whether the U.S. should be willing to extend New START following Russia’s violation of the INF treaty, whether the limits in the treaty continue to serve U.S. national security interests, and whether the insights and data that the monitoring regime provides about Russian nuclear forces remain of value.

The Trump administration postponed New START extension despite Russian willingness in an effort to negotiate a separate and more ambitious nuclear arms control deal that covers tactical and non-strategic weapons as well as the Chinese arsenal. However, the goal of creating a trilateral nuclear arms trade agreement before New START expires in 2021 is unrealistic. As Chinese Foreign Ministry spokesman Geng Shuang said, “China has no intention of joining the so-called trilateral arms control negotiations with the U.S. and Russia” based on their numerical limits.

According to Kori Schake, director of foreign and defense policy studies at the American Enterprise Institute, China's resistance does not render the existing treaty worthless.

EXECUTIVE ACTION

The Trump administration displays a continued interest in withdrawing the United States from international agreements it deems as poorly negotiated deals. From the Iran Deal and INF to trade deals like NAFTA, this administration tends to undervalue the existing agreements. Fortunately, New START extension is not vulnerable to some of the same pitfalls as the other, already-abandoned agreements. Russian diplomats are willing and eager to negotiate with their American counterparts and both parties still abide by the treaty’s central limits. The American intelligence community gains from New START extension, and consequently so do citizens by not burdening them with taxes to cover the increased costs from getting that same level of intelligence through much more expensive and inefficient means.

While the Trump administration’s current goal of pursuing New START extension with the inclusion of China is compelling in the long-term, the time required to pull off such a feat is not in this administration’s favor. The Trump administration could grasp the easy foreign policy win already within its reach by negotiating with the Russians to outright extend New START for the next five years. This option would preserve global stockpile numbers, mitigate any risk of an all-out nuclear arms race in the short-term, and buy more time to create a diplomatic solution that would meaningfully restrict the Russian exotic systems on the horizon and possibly approach China about joining a new, formal arms control agreement.

If including China in New START proves too difficult on such a short timeline, the options for extension could go in several different directions. Given the variety of downstream consequences to its extension or expiration, policy recommendations then depend on the section of government motivated to take up this cause. Outright extension of the treaty is the prerogative of the executive branch while oversight and funding functions that could significantly shape the conversation sit with the legislative branch.
In the absence of a thorough plan by the administration for mitigating these consequences, Congress should consider restricting funding for a nuclear modernization plan that procures more nuclear weapons or delivery systems beyond New START’s central limits—even if the treaty itself loses effect and enforcement.

for a new administration to propose a clean extension for the next two or three years. This solution would give both sides the necessary time to deliberate over any disagreements and reach an agreement that preserves and sustains arms control for the future.

**LEGISLATIVE ACTION**

While the power to extend New START does not rest with Congress, that does not cut members out of power entirely. On the most basic level, members can use their oversight powers to provide the State Department with the funding and personnel necessary to engage in negotiations. If vacancies sit open and personnel continues to be stretched too thin, Members of Congress must call upon administration officials like Secretary of State Pompeo to answer the hard questions on why negotiations stall and how to overcome roadblocks.

Members of Congress must also take very seriously the potential budgetary impacts of allowing New START to expire. As covered in Section One, not only will America lose the intensive regimen of verification and monitoring, but the intelligence community must then compensate for the lack of freely-available information. More resources for the intelligence community will either mean cutting funding elsewhere or raising the taxpayer burden on American citizens.

As covered in Section Two, even more troubling would be the possibility of a new large-scale arms race against Russia. Not only would this potential consequence further destabilize currently rocky relations with other major powers, but it would also create enormous downstream costs. The current nuclear modernization plan will already cost Americans $1.7 trillion over the next thirty years. Increasing beyond those anticipated levels will cost more money, put more strain on the defense industrial base, potentially lead to more procurement problems as programs are accelerated or expanded, and result in a nuclear arsenal far larger than necessary to keep Americans safe.

While it may be impossible to estimate the total costs of a new arms race and the damage to the intelligence community should New START expire, Members of Congress hold the ability to request and doggedly follow up on getting classified answers to these very important questions. In the absence of a thorough plan by the administration for mitigating these consequences, Congress should consider restricting funding for a nuclear modernization plan that procures more nuclear weapons or delivery systems beyond New START’s central limits—even if the treaty itself loses effect and enforcement. Acting in good faith by adhering to the original bargain struck between Russia and the United States could curtail a potential arms race and avert the need for more disastrous and wasteful nuclear weapons. If the executive branch continues down this dangerous pathway, the legislative branch must uphold its oversight and accountability duties to ensure that the government continues to serve the best interests of the American people.
ENDNOTES


5. Ibid, pg. 9


7. Ibid


11. Ibid


17. Ibid

18. Ibid


32. Ibid

33. Ibid


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48 Ibid

49 Ibid

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Ibid


Ibid


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WAND builds women’s political power to advocate for security and peace with justice. We believe that women are central to shifting the militarized, patriarchal culture that pervades our society and leads to endless war and violence.

WAND works to promote diplomacy and demilitarize U.S. foreign policy, elevate women’s voices in conversations about national security policy, and educate and engage women legislators and Members of Congress on peace and security issues.

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