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New START Verification: Up to the Challenge

The New Strategic Arms Reduction Treaty (New START) promises to lock in significant reductions in U.S. and Russian strategic arsenals by establishing lower ceilings on both deployed and non-deployed weapons. The treaty's verification provisions would provide the means for determining compliance with those lower limits. New START would permit the same high confidence in compliance achieved during the 15 years (1994-2009) when the original START was in force, but it would do so with more focused and up-to-date methods, including innovative verification provisions for monitoring deployed warhead ceilings. START's multilayered limits and the elaborate verification measures flowing out of them were born of the Cold War. The modified verification regime in the successor treaty is an appropriate response to post-Cold War realities. It is streamlined in accordance with the new treaty's simplified limits and well suited to fulfill its core function.

HIGHLIGHTS

- The purpose of including verification provisions in an arms control agreement is to provide mechanisms for increasing confidence that the sides are complying with the limits of the treaty and to provide sufficient time for a response if they are not.

- Effective verification provisions often enhance the collection of security information, but enhancing collection per se is not a sufficient rationale for including them in a treaty. Verification provisions can be justified as essential only through their relationship to the limits agreed on and their utility in monitoring, assessing, and encouraging treaty compliance.

- New START verification is based on reciprocal obligations, consistent with the force structures currently in place.

- The new treaty's inspection regime is the most intrusive ever negotiated for active nuclear forces, facilitating the counting of deployed warheads, one of the most challenging tasks of verification. Thus, the United States will be able to effectively monitor Russia's mobile intercontinental ballistic missile (ICBM) launchers and deployed warheads and both parties will be able to effectively monitor the other's submarine-launched ballistic missile (SLBM) launchers and deployed warheads.

- The new treaty sheds some of the elaborate verification provisions of START, which were designed in response to Cold War circumstances more dire than those we confront today and intended to guard against cheating scenarios even less plausible today than they were then.

- Two decades after the negotiation of START, national technical means of verification are more sophisticated; U.S. familiarity with Russia's strategic force structure and operations is much greater; Russia's overall military capability is much diminished; and bilateral relations are much improved. These developments account for the more streamlined verification package in New START.

- The New START agreement is effectively verifiable.

Background

On April 8, 2010, the U.S. and Russian presidents signed a new treaty in Prague to replace the 1991 Strategic Arms Reduction Treaty, which expired on December 5, 2009. While START limited each side to 6,000 warheads and 1,600 strategic nuclear delivery vehicles, New START will limit each side to 1,550 warheads, 800 deployed and non-deployed strategic ballistic missile launchers and deployed and non-deployed heavy bombers, and 700 deployed strategic ballistic missiles and deployed heavy bombers.

Today, each side has already reduced strategic warheads and associated delivery vehicles well below the original START ceilings. The United States currently deploys approximately 900 strategic ballistic missiles and heavy bombers; Russia deploys fewer than 600.[1] The United States currently deploys fewer than 2,000 strategic nuclear warheads;[2] Russia is believed to deploy some 2,500. New START will reduce by approximately 30 percent the 2,200-warhead maximum allowed under the 2002 Strategic Offensive Reductions Treaty (SORT) by the end of 2012.

In stark contrast to SORT, New START has a detailed verification regime. The new agreement promises the same high confidence in treaty compliance achieved under START's verification regime, but with modernized, less complicated verification provisions that are more appropriate to the new treaty's specific limits and the contemporary context. This assessment will seek to explain why, 20 years after the end of the Cold War, the elaborate verification regime of START is unnecessary and why the specially tailored and updated verification provisions of New START provide what the parties require.

Purpose of Verification

The object of arms control verification provisions is to give each party to a treaty confidence that the agreement's obligations are being implemented by the other party and that any militarily significant violation can be detected in a timely manner before security is jeopardized. Such provisions legitimize and facilitate procedures for monitoring compliance with the treaty's limits. Verification provisions can build trust and reduce the prudent worst-case estimates of military plan-

Table 1: Comparison of Strategic Arms Treaty Limits

This table compares limits in the 1991 Strategic Arms Reduction Treaty (START), the 2002 Strategic Offensive Reductions Treaty (SORT), and New START.

	START	SORT	New START
Status	Expired	In effect, pending entry into force of New START (implementation date: 12/31/12; expiration date: 1/1/13)	Signed, ratification pending
Strategic Nuclear Delivery Vehicles	1,600	No limit	800 ICBM/SLBM launchers and heavy bombers (deployed and non-deployed)
			700 deployed ICBMs/SLBMs and heavy bombers
Strategic Nuclear Warheads	6,000 (derived from missile-type and bomber-type counting rules)	2,200 "operationally deployed" (undefined)	1,550 actually deployed on ICBMs and SLBMs, and counted as one for each deployed heavy bomber
Verification Provisions	Extensive	None	Extensive

ners on both sides, lowering defense expenditures and mitigating tension during a crisis. Without effective verification provisions, an erosion in confidence about compliance is likely. Ensuing uncertainties can lead to a rise in one side's estimates of the other's force levels or an increase in suspicions about the other's motives and intentions. Calls for higher military spending can consequently become more urgent, and the potential for escalation of tensions in crises can increase.

The Historical Record

The history of arms control provides dramatic examples of agreements that were fatally flawed because of insufficient attention to verification. The negotiated naval limitations of the interwar years—the Versailles Peace Treaty (Part V) of 1919, the Washington Treaty of 1922, the London Naval Treaty of 1930, and the Anglo-German Naval Agreement of 1935—relied heavily on tonnage limits as the principal secondary unit of account after warship numbers, but provided no reliable method of verifying compliance. Combined with inadequate resolve by the other parties to enforce compliance, these flaws allowed Japan and Germany to build warships significantly exceeding their allowed tonnage, weakening the impact of the numerical limits on ships. The Biological Weapons Convention of 1972 contained no verification provisions and was soon being massively violated by the Soviet Union.

SORT also was conspicuous for its lack of any verification provisions, a characteristic that is now resulting in a gradual degradation in the parties' ability to monitor each other's strategic forces, since START's overlapping verification provisions have lapsed with the expiration of the treaty and New START has not yet entered into force.[3]

In other cases, such as the 1972 Anti-Ballistic Missile (ABM) Treaty, the verification provisions of the agreement were ultimately effective without being elaborate or intrusive. The central limits, which featured the number of permitted ABM launchers and the number and location of ABM radars, were highly visible to optical surveillance satellites and through other national technical means. In addition, there were provisions for exchanges of data and a protocol specifying procedures and notifications for the "replacement, dismantling, or destruction of ABM systems and their components," but no advance agreement about a right to examine such activities on-site.

Vigorous and sustained diplomatic efforts to investigate suspicions and address violations compensated for the thinness of verification provisions. Verification efforts included extensive discussions and difficult negotiations within the Standing Consultative Commission and through other means, such as exerting pressure through public diplomacy and resolving ambiguities through *ad hoc* inspections. These efforts ultimately succeeded in reversing the Soviet violation of ABM Treaty Article VI(b), through the dismantlement of the large phased-array radar at Krasnoyarsk, and in scaling back U.S. plans to develop and test space-based ABM systems based on "other physical principles," a contravention of ABM Treaty Article V. In addition, they led to agreement in 1997, though never ratified, on distinguishing between strategic systems, which were limited by the treaty, and theater systems, which were not.[4] The United States withdrew from the ABM Treaty in 2002.

Jewel Samad/AFP/Getty Images

President Barack Obama (left) and Russian President Dmitry Medvedev sign the New Strategic Arms Reduction Treaty (New START) in Prague April 8.

Verification and Intelligence Collection

Above and beyond providing confidence that the parties are complying with a treaty, the information acquired as a result of exercising the verification provisions of arms control treaties helps to satisfy the critical national security requirement of monitoring potential opponents' military forces. This value was cited with reference to START by Senator Jon Kyl (R-Ariz.) when he stated on the Senate floor in late 2009 that the treaty had allowed the United States "to have confidence in its ability to understand Russian strategic nuclear forces."[5] Gaining this understanding may indeed be desirable in providing for the nation's defense, but this benefit of arms control verification must be recognized as a collateral one. Mutually agreed provisions must be negotiated and legitimized on

the basis of their value in verifying treaty limits, not in enhancing a party's intelligence database.

The military services of each side have an obligation to protect their own secrets as well as a mission to ferret out the military secrets of the other. The government in Moscow, in both its Soviet and Russian manifestations, has been historically far more guarded about revealing defense information and more suspicious of espionage and definitive elimination procedures, whether they work in Washington or Moscow. The long-term savings yielded by lowering force levels on the basis of verifiable limits rarely get thrown into calculating the budget impact.

It has nonetheless been possible in practice to construct verification provisions occupying the middle ground between insufficient transparency and overexposure. These provisions satisfy separate and countervailing military requirements, opening the sides to information collection adequate to assess treaty-limited forces accurately while protecting operational secrets required for successful mission performance. In order to win the benefits of strategic arms control while maintaining the credibility of the nuclear deterrent, both objectives must be achieved. New START strikes the necessary balance.

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than has its U.S. negotiating partner. The Soviet archipelago of secret cities where sensitive defense work was performed during the Cold War stood as powerful witness to Moscow's determination to protect security information. The practice of banning tourists from photographing train stations and airports decades after World War II illustrated the extent of the Soviet Union's obsession with security.

By virtue of the generally open nature of U.S. society and prevailing U.S. attitudes about the public's need to know, the United States has been more willing to tolerate negotiated measures involving greater transparency and intrusiveness than its superpower rival. Yet, the United States also has worked hard to keep secrets, most spectacularly concerning the Manhattan Project during World War II, but also later with regard to many key Cold War programs.

To a large measure then, arms control verification runs against the grain of national security instincts and the counterintelligence mission of the military and intelligence services of both sides. Indeed, complete transparency can pose a security threat to nuclear deterrent forces, which may depend for their survival in time of war on keeping their locations hidden. This is particularly true for SLBMs and land-mobile ICBMs. Although the number of these missiles needs to be verified by the other side, that side should not be able to track their deployed locations on a routine and real-time basis, as that would undermine missile survivability.

Moreover, direct exposure of one side's operational military personnel, who possess sensitive information, to potential intelligence personnel from the other side inevitably fosters counterintelligence concerns, increasing resistance to on-site inspections.

Furthermore, those who focus on the short-term financial costs of arms control treaty implementation may resist agreement to intrusive inspection measures

START: Born of the Cold War

START monitoring and verification provisions were drawn up during a Cold War period of deep mutual suspicion about motives and actions and of very limited experience with up-close inspection measures. Highly improbable scenarios were taken seriously in devising START's elaborate verification schemes. Nothing was left to chance; goodwill was not assumed, and the benefit of the doubt was not extended.

It is instructive to review some of the assessments of Soviet capabilities that were either dominant within the U.S. government or sufficiently prominent that they had to be addressed in the treaty to give ratification efforts a fighting chance. The writings of Albert Wohlstetter, Richard Pipes, and Paul Nitze in the 1970s about Soviet capabilities and intentions[6] set the stage for President Gerald Ford's 1976 invitation to a group of influential "outsiders," including Pipes and Nitze, to perform an alternative analysis to the intelligence community's assessment of Soviet military power. As a member of the resulting "Team B," Nitze warned in 1976 of "the impending strategic imbalance."[7] This was at a time when the United States was actually widening its advantage over the Soviet Union in strategic warhead numbers and accuracy, the survivability of its ballistic missile submarines, and the effectiveness of its bomber weapons.

Accurate or not, such hard-line views were widespread among members of the Reagan administration who

directed the negotiations of the 1980s leading up to the final shape of START. History has ultimately proved CIA ("Team A") estimates of the 1970s far more accurate than those of Team B challengers on such issues as Soviet ICBM accuracy and Backfire bomber range.[8]

Moreover, recent access to Soviet participants and documentation shows that senior U.S. policymakers and intelligence officials in the 1980s were very slow to appreciate Soviet leader Mikhail Gorbachev's genuine desire and willingness to make deep cuts in Soviet nuclear weapons levels. Even as Reagan's own notions of U.S.-Soviet negotiating possibilities finally started to change, his advisers and those of his successor, George H. W. Bush, were conspicuously more cautious. The length of START and the complexity of its verification provisions were a logical outgrowth of this caution.

Satanic Verses

Soviet SS-18 (Satan) ICBMs, collectively carrying 3,080 warheads (attributed according to the rule based on the maximum number flight-tested with the missile), were regarded by U.S. strategic analysts as the most threatening part of the formidable Soviet arsenal. Each SS-18 warhead was assessed to be capable of destroying a U.S.-based ICBM in its hardened silo. Tested and deployed with 10 warheads, this "heavy missile's" enormous (8.8-ton) throw weight gave it a technical capacity to carry nearly four times the number of warheads attributed to it by the treaty.[9]

In a seminal 1976 article, Nitze wrote that the aim of increasing strategic stability "is not served by reducing numbers of launchers, unless throw-weight is also reduced and made more equal."[10] The START warhead

Figure 1: Tailoring Verification Measures to the Limits

In order to ensure that the parties to New START can verify compliance with the treaty's limits, specialized measures were either borrowed from START or newly developed.

- An extensive list of **notifications** is provided. For example, movement of forces into and out of deployed status must be notified within five days (Protocol: Part Four, Section II) and Russia must notify the United States 48 hours in advance when a new ICBM or SLBM leaves the Votkinsk missile production facility (Protocol: Part Four, Section III), enhancing the prospects that such movements will be captured by satellite surveillance. Notifying such events reduces tension, avoids misunderstandings, and facilitates the monitoring of compliance. By receiving tip-offs of relevant activities, the sides can better target their technical collection assets and correctly assess non-hostile activity.

- Regularly updated **data exchanges** are required across a range of systems and activities (Protocol: Part Two). These exchanges facilitate understanding, enhance confidence in force estimates, and provide the basis for more productive resolution of differences.

- **On-site inspections** provide information unavailable in comparable quality through other means. New START allows 18 on-site inspections annually (Protocol: Part Five, Section VI). The new treaty specifies two types of inspections: Type One inspections allow for the inspection of sites with deployed and non-deployed strategic systems (10 per year); Type Two inspections allow for inspection of sites with only non-deployed strategic systems (eight per year). Permissible inspection activities include: confirming the number of re-entry 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.

- **Unique identifiers** are assigned to each ICBM, SLBM, and heavy bomber for the first time in a strategic arms control agreement. These identifiers will be included in applicable notifications. Inspectors have the right to read the unique identifiers on all designated ICBMs, SLBMs, and heavy bombers located at the inspection site during on-site inspections (Protocol: Part Five, Section VI).

- **Confidence-building measures** help promote transparency and predictability. For example, both states have agreed to exchange annually on a parity basis telemetric information on up to five ICBM and SLBM launches from the previous year (Protocol: Part Seven). Another example is the conducting of exhibitions to demonstrate the distinguishing features and to confirm technical characteristics of new types or variants of nuclear delivery vehicles or former nuclear delivery vehicles (Protocol: Part Five, Section VIII).

- A forum for compliance discussions, the **Bilateral Consultative Commission**, is established to facilitate compliance and cooperation. This body will meet twice a year in Geneva, unless otherwise agreed. Issues regarding compliance or implementation of the treaty may be raised in this body by either side (Protocol: Part Six).

Vladimir Rodionov/AFP/Getty Images

President Dmitry Medvedev (center) stands in front of a Russian road-mobile Topol-M (SS-27) ICBM. Under New START, each such missile will contain a "unique identifier." The missile's canister and deployed launcher will carry the same identifier. Inspectors will have the right to read the identifier in the course of an on-site inspection.

attribution rule for missiles and its limit of 154 heavy missiles and proscription on the production, testing, and deployment of new types of heavy ICBMs were thus seen as significant achievements. The need to be sure that operational SS-18 launcher numbers were being brought under START's numerical limits was one of the compelling reasons for the demanding elimination procedures specified by the treaty.

According to Lt. Gen. Andrey Shvaichenko, commander of Russia's Strategic Rocket Forces, a development program is underway for a new heavy liquid-fueled ICBM as a replacement for the SS-18.[11] If that were to occur under New START, however, Russian breakout capabilities would be less worrisome than under the previous treaty, because the new treaty's verification provisions would enable the United States to ascertain actual warhead loadings of individual missiles through on-site inspections. Deploying missiles, each carrying many independently targeted reentry vehicles, would require the Russians to significantly reduce the number of deployed ICBMs and SLBMs in order to stay under the deployed warhead limits.

Verification Provisions Flow From Treaty's Limits

Detailed and extensive verification and monitoring measures were written into START because that treaty had included comprehensive limits to contain threats and rule out a wide range of cheating scenarios. These limits not only included the number of deployed strategic nuclear delivery vehicles, but also a series of nested sublimits and interconnected definitions.

START specified the number of warheads attributed to each strategic missile or bomber type and then limited the number of warheads each type could carry; how many could be carried by ICBMs; how many by heavy ICBMs; how much aggregate missile throw weight would be allowed; how many warheads could be downloaded before the "bus" would have to be destroyed and replaced with one that conformed to the actual reduced number of warheads; how many non-deployed mobile missiles and launchers would be allowed, with separate limits for road-mobile and rail-mobile launchers; how many ICBM and SLBM launchers were allowed at test, training, and space launch sites; and limits on what was an existing versus a new type. There were also prohibitions on the production, testing, and deployment of several new types of weapons.

START limits on throw weight and new missile types generated requirements to gain uninhibited access to telemetry, the signals broadcast from or recorded by the missile so engineers could measure performance during flight tests. Similarly, mobile-launcher limits led to provisions permitting on-site monitoring of missile production facilities and periodic on-site inspections of mobile-missile bases.

Redundant Capabilities

START verification measures were cross-fertilizing and sometimes deliberately redundant, providing protection against single-point failure so there would be more than a single stream of information with which to assess compliance. Measures such as the ban on telemetry encryption of missile flight-test data and the exchanging of telemetry tapes made significant contributions to raising confidence levels that the sides were complying with treaty provisions. However, uninhibited access to telemetry broadcasts or the receipt of tapes was generally confirmatory, building on or refining information

already collected. Rocket science is precise and well understood. Returns from U.S. radar and infrared sensors deployed offshore, which could be collected and analyzed without cooperation from Russia, played a major role in establishing the original database for individual systems. Other fortuitous opportunities were exploited as well, such as retrieving and examining spent Soviet missile nosecones from the floor of the Pacific during the 1960s.[12] Up-close perusal of Russian strategic systems under START thus confirmed and sharpened the previous picture gained by national technical means.

Then and Now

Whatever role fear and overestimates played in prompting START's extensive and elaborate limits, the circumstances bearing on Soviet strategic capabilities then were significantly different from those of Russia today. START was negotiated when Moscow could command the full resources of all 15 Soviet republics, including the spacious nuclear and missile test ranges of Kazakhstan and the prodigious missile production and design facilities of Ukraine, home to the SS-18 ICBM design bureau and manufacturing plant. In addition, Moscow benefited from the in-depth defense permitted by deploying Soviet forces forward into Central Europe, far from the Soviet Union's western border, and reinforcing them with the armies of its Warsaw Pact allies.

The sophistication of national technical means such as imagery intelligence and signals intelligence has taken a quantum leap since the days when START was negotiated. Dramatic advances in commercial optical imagery systems during the last 20 years suggest parallel if not completely proportionate improvements in classified imagery technology. The French SPOT satellite was advertising a ground resolution of 25 meters in 1988[13] and 2.5 meters in 2010.[14] In 2008, GeoEye launched a satellite claiming a resolution of 14 inches (0.36 meters).[15] A similar evolution of steadily increasing resolution has been reported in succeeding generations of imaging radar satellites.[16]

Fifteen years of treaty implementation and resolution of differences in START's Joint Compliance and Inspection Commission has likewise broadened and deepened the knowledge base of the two sides concerning each other's strategic systems and operating procedures, and it has raised the level of mutual understanding and trust. The overall impact of START verification provisions was to give the sides a very robust understanding of the strategic threats they faced. Moreover, this information has been collected and confirmed without jeopardizing the credibility of either side's deterrent.

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Votkinsk

New START did not replicate the most onerous requirements of the past treaty. The perimeter-portal continuous monitoring (PPCM) facility at Votkinsk is a case in point. It was first established under the 1987 Intermediate-Range Nuclear Forces (INF) Treaty to ensure that no new Soviet SS-20 intermediate-range ballistic missiles were produced, in parallel with the establishment of a similar facility for the Soviets in Magna, Utah, to assure them that no new Pershing II medium-range ballistic missiles were being produced. With both sides planning to deploy a significant percentage of their overall ICBM warhead total on mobile ICBMs, PPCM continued operating under START, although with a significantly reduced number of monitors. A similar facility was briefly established at Pavlohrad, Ukraine, the site of rail-mobile SS-24 ICBM assembly. The monitoring operation limited breakout potential by counting actual missile production at the source and ensured that no new types were being introduced undeclared into the Russian arsenal. With the elimination of all INF systems under the INF Treaty and the end of new U.S. Peacekeeper ICBM production in the late 1980s, there was no longer a U.S. facility for the Russians to monitor. Russia, however, was still producing land-based mobile strategic ballistic missiles at Votkinsk, including the SS-25 ICBM, the SS-27 (Topol-M) ICBM, and the new RS-24 ICBM, albeit at a much lower missile production rate than in the past.

The Russians had been chafing under this asymmetry of exposure for some time. In October 2008, the Bush administration agreed to close the monitoring facility at Votkinsk when START expired in December 2009 as part of a larger proposal that was never concluded or even actively discussed. When the date arrived for the treaty to lapse, the facility was closed.

U.S. Mission Geneva

The heads of the two New START delegations, Rose Gottemoeller of the United States and Anatoly Antonov of Russia, shake hands at the closing plenary in Geneva April 9. Both delegations included members who had served as inspectors under the original START regime.

New Challenges

New solutions have been devised to meet new verification challenges. One example concerns the monitoring of actual warhead loadings on ICBMs and SLBMs. In START, one of the key verification tasks was to confirm that the number of warheads deployed on a particular ballistic missile did not exceed the number attributed to it under the treaty. In New START, the key task will be to confirm the actual number of warheads on a particular ballistic missile, because the treaty allows the parties flexibility in deciding warhead loadings. The United States, for example, apparently intends different warhead loadings on same-type missiles in individual submarines.[17]

Russia will be particularly interested in verifying Trident SLBM warhead loadings given the uploading capability inherent to the missile. The United States has a particular interest in verifying that the aggregate number of Russia's deployed ICBMs and ICBM warhead loadings do not exceed New START's ceilings.

In order to address these requirements, New START calls for unique identifiers to be assigned to each ICBM, SLBM, and heavy bomber. In New START, the parties will have to declare the actual number of warheads on individual missiles. The overall number of deployed missiles and bombers to be monitored has been significantly reduced from START levels. Russia has 40 percent fewer strategic sites to be inspected than previously. Nonetheless, there will still be 18 on-site inspections annually for each side under the new treaty, and multiple tasks will be allowed during each inspection.

Telemetry Measures: From Critical Verification to Useful Confidence-Building

"Telemetry" refers to the on-board measurements of technical parameters of missile performance that are broadcast during flight tests. Providing uninhibited access to the telemetry signals of the other side was a very important verification aspect of START, because it allowed the treaty parties to more accurately assess missile parameters such as throw weight, number of re-entry vehicle releases, and accelerations, all of which related closely to verifying compliance with limits in the treaty. In contrast to the previous treaty, assessing compliance with New START's obligations and limitations does not require analysis of telemetric information. For example, there are no restrictions on "new types" that would require the parties to determine characteristics such as the throw weight of missiles being flight-tested. Even so, New START includes a provision

for the exchange of telemetry information on up to five ICBM or SLBM flights from the previous year. However, the purpose of telemetry exchange in the new treaty is simply to promote openness and transparency rather than to verify specific treaty limits.

Verification Measures New, But No Less Effective

The streamlined verification measures of New START are tailored to the post-Cold War limits in the new treaty. Long years of intensive interactions between the parties and hard-won familiarity with the patterns and practices of their strategic forces have allowed the negotiators in today's more positive political climate to find innovative solutions to the verification challenges the parties currently face. Combining the significant reductions charted by the new agreement with a leaner but still effective verification regime constitutes a positive new start on the long and difficult journey away from the danger of nuclear war.

ENDNOTES

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2. Department of State Bureau of Public Affairs, "The Nuclear Non-Proliferation Treaty: Promoting Disarmament," April 27, 2010

3. While some of New START's provisions were applied following signature, and although the 15 years of mutual on-site inspection experience under START offers some residual benefits, a decline in information flow is inevitable pending entry into force of the new treaty.

4. "Second Agreed Statement Relating to the Treaty Between the United States of America and the Union Of Soviet Socialist Republics on the Limitation of Anti-Ballistic Missile Systems of May 26, 1972," September 26, 1997, para. 1, www.state.gov/www/global/arms/factsheets/missdef/abm_scc2.html

5. Jon Kyl, "Floor statement on New START," November 21, 2009.

6. See Albert Wohlstetter, "Optimal Ways to Confuse Ourselves," *Foreign Policy*, No. 20 (Autumn 1975), pp. 170-198; Paul H. Nitze, "Assuring Strategic Stability in an Era of Détente," *Foreign Affairs*, Vol. 54, No. 2 (January 1976); Richard Pipes, "Why the Soviet Union Thinks It Could Fight and Win a Nuclear War," *Commentary*, Vol. 64, No. 1 (July 1977).

7. Nitze, "Assuring Strategic Stability in an Era of Détente," p. 208.

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