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New START: The Anatomy of a Failed Negotiation

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**New START:
The Anatomy of a Failed Negotiation**

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Introduction

The New Strategic Arms Reduction Treaty (New START), which entered into force on February 5, 2011, was trumpeted as a significant accomplishment by the Obama administration. However, when measured against the most basic metrics for nuclear arms limitation treaties to enhance U.S. security (e.g., significant reductions or limits on nuclear weapons and effective verification measures), New START should be judged a failure. Especially worrisome is the potential adverse effect of New START for future arms control negotiations between the United States and the Russian Federation. This report provides an in-depth analysis of the New START Treaty, identifies the treaty's many shortcomings, and discusses why this treaty does not provide a net benefit to serve the national security interests of the United States.

Speaking to the Russian Duma on December 24, 2010, Defense Minister Anatoliy Serdyukov announced that Russia was currently below the New START Treaty's limits on deployed warheads and delivery vehicles, but that it intended to expand its nuclear forces to meet those limits. He said, "By all parameters, even missile launchers, we will only reach the level set by the treaty by 2028. As for warheads we will reach [the ceilings] by 2018."¹ According to Serdyukov, "We will not have to make any cuts to our strategic offensive weapons....But the Americans — they will indeed have to make some cuts."² This was not an isolated statement. On January 14, 2011, he again reiterated this before the Duma emphasizing that, "Not a single unit will be cut. We will meet every parameter established by the treaty before 2028, while the warhead limits will be met by 2018."³ On January 17, 2011, the Russian Defense Minister stated that New START "will enable the Russian Federation to fulfill the requirements of START without destroying battle-ready strategic missile and aircraft systems with a current service life."⁴ On January 25, 2011, Minister Serdyukov told the Russian upper house, the Federation Council, "The treaty doesn't constrain us in any way....Its parameters considerably exceed our potential today."⁵ On June 1, 2011, the State Department announced that Russia was below both the limit of 1,550 deployed warheads and 700 deployed delivery vehicles: the Russians had declared 1,537 and 521, respectively, in the first of the New START data exchanges.⁶ Thus, Russia will make no reductions in deployed warheads or delivery vehicles due to treaty limitations. By contrast, the United States will have to reduce its accountable warheads from 1,800 to 1,550 and its deployed strategic delivery vehicles from 882 to 700.

This should not have come as a surprise to anyone. Throughout and after the New START negotiations, Russian generals repeatedly stated that the New START Treaty would not force the retirement of any Russian nuclear system with useful life.⁷ A detailed analysis by the Heritage Foundation had also demonstrated that the supposed reductions in the New START Treaty were illusory.⁸ Moreover, then-Senator Christopher (Kit) Bond (R-MO), vice chairman of the Senate Select Intelligence Committee, told the American people on the floor of the U.S. Senate that, "The first thing we must all understand about this treaty is that it forces the United States to reduce unilaterally our forces, such as missiles, bombers, and warheads, in order to meet treaty limits. On the other hand, the Russians will actually be allowed to increase their deployed forces because they currently fall below the treaty's limits. This raises a crucial question: exactly what does the United States gain from this treaty in exchange for a one-sided reduction in our deployed forces?"⁹

There is no question about the asymmetry between Russian and U.S. strategic force reductions under New START. In essence, New START codifies quantitative and qualitative Russian nuclear force **increases** under the guise of nuclear **arms reductions**. Even before the first statement by Minister Serdyukov quoted above, Russian Major General (ret.) Vladimir Dvorkin pointed out, “Firstly, it [New START] does not provide a real reduction of strategic offensive armaments by the number of nuclear warheads as compared with the Moscow Strategic Offensive Reductions Treaty [SORT] of 2002 due to the new rules in counting nuclear armaments of heavy bombers: one heavy bomber—one warhead.”¹⁰ As a result, the number of warheads carried by Russian Tu-160 and Tu-95MS heavy bombers (over 850) counts as only 77 under New START.¹¹

Senator Bond certainly posed the right question to the administration. However, rather than forthrightly answering the question, the Obama administration proceeded to attack the Senator explicitly, denying the validity of his analysis. In response to Senator Bond’s criticism, the Obama administration adamantly asserted that, “The Treaty does not force the United States to reduce unilaterally.”¹² The State Department’s misrepresentation of the impact of the Treaty on Russia’s strategic forces (now completely confirmed by the Russian data declaration) took place after then-Secretary of Defense Robert Gates had admitted in a June 17, 2010 Senate Armed Services Committee hearing that Russia was already below the New START limit on deployed delivery vehicles.¹³ At the same hearing, Secretary of State Hillary Clinton inaccurately stated that New START would require “reductions on the Russian side.” Furthermore, she dismissed claims that Russia would not be forced by the New START Treaty to make force cuts, stating that such claims were a “perfect example” of how “analysts who just don’t believe in arms-control treaties at all from my perspective are very unfortunately slanting a lot of what they say.” This constituted either a mischaracterization or reflected ignorance of the status of Russian strategic forces. If it is the latter, it is striking in light of the degree of her personal involvement in the New START negotiation.

It was hardly a secret that Russia was already below the delivery vehicle limit. Indeed, in February 2010, Assistant Secretary of State Rose Gottemoeller cited a report that, “over the course of the new treaty, Russia is likely to have 396 deployed launchers.”¹⁴ The New START limit is 700. Despite this, as Keith Payne, former deputy assistant secretary of defense in the Bush administration, astutely pointed out, “the Obama administration typically presented the treaty as requiring Russian reductions, and senior Russian officials remained mum until after the Senate had acted.”¹⁵ Indeed, President Barack Obama in his letter of transmittal for the treaty to the U.S. Senate stated it “mandates mutual reductions and limitations...”¹⁶

The question of whether the New START Treaty mandates a reduction in Russian strategic nuclear forces is important because New START does reduce operational U.S. strategic delivery vehicles by about 25 percent from the legacy force of 882 deployed launchers to 700. This is in addition to the reduction of 196 operational delivery vehicles made during the Bush administration.¹⁷ Major U.S. negotiating leverage was sacrificed in exchange for little or nothing. It is not possible to sacrifice 25 percent of the legacy strategic force too many times, particularly when one gets nothing in return except a signing ceremony. Moreover, the Obama administration’s willingness to negotiate a weak and deeply flawed arms control agreement, arms control for the sake of arms control, will clearly embolden the Russians to seek more concessions from the United States in follow-on arms control negotiations—if there are any—

since Russia does not appear to be very interested in negotiated reductions of the most interest to the United States.

The Russian government rightly believes that the New START Treaty represents a victory for Russia. Russian President Vladimir Putin has said that the ratification of the treaty is “an unconditional success of [former] President [Dmitry] Medvedev as head of state” in the sphere of foreign policy.¹⁸ The Russian Federation Council’s International Affairs Committee chairman, Mikhail Margelov, observed that Russian relations with the United States are clearly improving, without “notable concessions” from Russia, unlike in the 1990s.¹⁹ In an interview with *Izvestiya*, former Vice Chairman of the Duma’s Defense Committee Alexei Arbatov characterized New START as a treaty on limiting the American strategic forces.²⁰ Alexander Khranchikhin, deputy director of the Moscow-based Political and Military Analysis Institute, told Interfax-AVN that New START “is very beneficial for us and not quite as beneficial for the Americans.”²¹ According to *Russia Today*, General Nikolai Makarov, chief of the Russian General Staff, stated, “The previous START treaty was flawed, but there were attempts to extend it....The new START is the first treaty that satisfies us.”²²

Much of the Obama administration’s case for New START is not an accurate reflection of the substantive content of the Treaty. Indeed, the Treaty is riddled with substantive loopholes. In October 2010, the Senate Foreign Relations Committee’s minority report accurately pointed out, “New START supposedly establishes a ceiling of 1,550 warheads on strategic nuclear delivery vehicles. Yet, due to the porous limitations and permissive bomber and other counting rules, that would allow unlimited air-launched cruise missiles and could include other uncounted options like sea-launched cruise missiles, there is a distinct possibility that by the end of the ten-year life of this treaty Russia will easily have well over 2,000 real—as opposed to accountable—deployed strategic nuclear warheads and thousands of tactical nuclear warheads.”²³ The bomber weapon counting rule alone allows a party to have about 500-1000 more weapons than their notional accountability under the Treaty. It is interesting to compare Article V of the New START Treaty with Article V of the original 1991 START Treaty. Literally dozens of START prohibitions and limitations have been omitted from the New START Treaty. The effect of this is to allow an unlimited number of intercontinental-range strategic nuclear forces if these loopholes are exploited. As the Senate Foreign Relations Committee’s minority report pointed out, “New START is a bad deal coming and going: it neither places effective limits on a future Russian renewal of its strategic nuclear forces (the beginnings of which already can be seen), nor does it demand real Russian reductions now. This the administration touts as a great negotiating accomplishment.”²⁴

There is simply no doubt that the New START Treaty has degraded the START verification regime. It is clearly not “trust but verify.” Even some of the supporters of New START ratification voiced concern about inadequate verification. Former Secretary of State James Baker told the Senate Foreign Relations Committee in May 2010, that the verification regime, “does not appear as rigorous or extensive as the one that verified the numerous and diverse treaty obligations and prohibitions under START I. This complex part of the treaty is even more crucial when fewer deployed nuclear warheads are allowed than were allowed in the past. As a result, the proposed verification regime deserves thorough scrutiny.”²⁵ Major General (ret.) Vladimir Dvorkin noted the reduction in the number of notifications on the status of strategic arms, their movements, and inspection activities was reduced to 42 from 152 under START, and the reduction in the number of inspections was from 28 to 18.²⁶

Indeed, in the words of former Under Secretary of State for Arms Control and International Security John Bolton, “while important in any arms-control treaty, verification becomes even more important at low warhead levels....At present, we know only that we have lost important START requirements for on-site inspections, telemetry exchanges, and production monitoring.”²⁷ Senator Christopher Bond noted the serious problems with New START verification. He stated that, “The Select Committee on Intelligence has been looking at this issue closely over the past several months. As the vice chairman of this committee, I have reviewed the key intelligence on our ability to monitor this treaty and heard from our intelligence professionals. There is no doubt in my mind that the United States cannot reliably verify the treaty’s 1,550 limit on deployed warheads.”²⁸

Throughout the ratification process for New START the Obama administration stated that it would immediately begin negotiation of a new agreement that would deal with tactical nuclear weapons. Assistant Secretary of State Rose Gottemoeller wrote in September 2010 that, “Ratification of New START will be a key step to engaging Russia on its large stockpile of nonstrategic/tactical nuclear weapons. Without ratification and entry into force of New START, Russia will be reluctant to negotiate reductions or limitations on those weapons.”²⁹ She obviously had no reason to believe this would happen. Russia had been saying “no” to negotiations on tactical nuclear weapons for over a decade. Colonel General (ret.) Leonid Ivashov, the senior Russian general managing the 1990s START III negotiations, has stated that Washington put tactical nuclear weapons on the negotiations agenda three times and Russia refused three times.³⁰ Russian Foreign Minister Sergei Lavrov, when speaking before the Russian Duma just after the U.S. Senate ratified New START, rejected negotiations concerning tactical nuclear weapons, stating, “Our absolute priority is the implementation of the treaty [which is] being debated today. Our other priorities include a need to understand how the situation will unfold around the missile defense shield, how issues of conventional weapons are tackled in Europe, and certainly whether or not the problem of preventing the deployment of any weapons in space is resolved.”³¹ Soon after this, in an interview with Russian journalists, Russian Deputy Foreign Minister Sergei Ryabkov said, “We are not even close to discussing the prospect of concluding any agreement in this sphere, the more so as we don’t know yet how the [new] ratified arms reduction treaty will be implemented.”³² ITAR-TASS, the main official Russian news agency, reported that Ryabkov stated, “The questions of tactical nuclear weapons as such are not among these topics that Russia regarded as high priority.”³³ In March 2011, Ellen Tauscher, under secretary of state for arms control and international security, conceded that it will take a long time to achieve agreement on tactical nuclear weapons and she was hoping that an agreement on missile defense would ease the problem.³⁴

According to then-National Security Council Senior Director for Russian and Eurasian Affairs, Michael McFaul, “We believe that without some kind of cooperation on missile defense, it’ll be difficult for us to get on to the other negotiations about reducing strategic nuclear weapons further and non-strategic weapons that are in Europe.”³⁵ In light of the administration’s acceptance of a linkage between missile defense and offensive nuclear reductions, this statement is ominous. Russia has no interest in missile defense cooperation other than as a means of limiting U.S. missile defense programs or possibly obtaining U.S. missile defense technology under the guise of “cooperation.” The Russian position on missile defense cooperation was stated by Deputy Prime Minister, and former Defense Minister, Sergei Ivanov, when he said that Russia would “not ‘cooperate’ against itself.”³⁶ This reflects the Russian view

that the very small U.S. missile defense deployment is aimed at Russia and constitutes a threat to Russia.

Since Senate ratification of the New START Treaty in December 2010, the Russians have been particularly outspoken about establishing legal limits on missile defense or Russian control of U.S. missile defense programs. Then-President Dmitry Medvedev has stated, “Since a missile defense shield may be an element of the strategic nuclear arsenal, Russia wants security guarantees.”³⁷ He then threatened NATO with nuclear missile deployments if Russian demands were not met: “Either we agree on certain principles with NATO and create a joint system to resolve missile defense tasks, or we do not agree, and then we will have to make a number of unpleasant decisions in the future regarding the deployment of a strike nuclear missile grouping.”³⁸ The Russian position, according to Chief of the General Staff General Nikolai Makarov, is that there “should be the permanent participation of Russian experts in drafting the European missile defense architecture.”³⁹ Then-chief Russian negotiator Dmitriy Rogozin made this even clearer when he stated that, “Each side will have its own button to launch operative [missile] systems, but decisions on their application should be made jointly.”⁴⁰

McFaul is obviously aware of Russian attitudes toward missile defense. His statement may very well signal intent by the Obama administration to try to buy Russian acceptance of a post-New START negotiation on tactical nuclear weapons with concessions on missile defense. This linkage potentially has very serious negative implications for U.S. national security and international global stability. Moreover, such a strategy has little chance of working.

In light of the Obama administration’s disingenuous explanation of the Treaty’s content, and its dismissal of the national security implications of the reduced New START verification regime, this study examines the restrictions and verification procedures in the New START Treaty and the implications of these on the U.S. nuclear deterrent and the critical requirement for extended deterrence. It then assesses the reasons for the failure of the New START negotiation to enhance U.S. national security. Taking this into account, it then looks at the implications of New START for the next round of arms control negotiations with Russia. In doing so it will analyze in more detail the role of nuclear weapons in Russian strategy, the abysmal Russian arms control compliance record, and the verification issues associated with further nuclear arms reductions, including limitations on tactical nuclear weapons and the objective of nuclear zero.

Chapter I

A Treaty Without Limitations

Effective and mutually constraining limits on weapons and capabilities have long been a hallmark of effective arms control treaties. However, the New START Treaty contains numerous loopholes which fail to establish meaningful limits on strategic nuclear weapons. In addition, while constraints established by the treaty in theory apply to both parties, some New START constraints in practice will constrain only the United States. This chapter discusses the issue of limits established by New START, the elimination of limits set by the now-expired START I Treaty, and the practical implications of those provisions.

In many respects the New START Treaty represents a reversion to pre-Reagan arms control. It has more in common with President Jimmy's Carter's failed SALT II Treaty (which allowed enormous growth in force levels) than with Ronald Reagan's START Treaty. The Obama administration's claimed 30 percent reduction in nuclear warheads is not true. In reality, Russian strategic forces will actually increase under the New START Treaty. This will happen, according to Russian Defense Minister Anatoliy Serdyukov, because the Russians were below the New START limits and, "The parameters of 700 [delivery vehicles] and 1,550 [deployed warheads] allow us to develop essentially without restrictions and at quite a serious pace for at least 15 years. This is for sure."⁴¹ The fact that Russia was under the New START limits on deployed warheads and delivery vehicles was confirmed in the first Russian New START data declaration. The Treaty is so permissive that the United States could in theory, but won't, increase its deployed strategic nuclear warheads in spite of the fact that the number of U.S. delivery vehicles will be cut by 25 percent.

Former Assistant Secretary of State Christopher Ford calculated that the United States can have 1,911 operationally deployed nuclear warheads under New START counting rules.⁴² The Department of State informed the Congress in June 2011 that the number of U.S. operationally deployed strategic nuclear warheads accountable under the Moscow Treaty—warheads mounted on intercontinental ballistic missiles (ICBMs) and submarine-launched ballistic missiles (SLBMs) and heavy bombers or stored in bomber weapons storage areas at bomber bases—was 1,944 as of date of New START entry into force and Moscow Treaty termination in February 2011.⁴³ (New START terminated the Moscow Treaty.) The 1,800 deployed warheads the United States declared as accountable under New START at entry into force is not based on the definition of "operationally deployed strategic nuclear warheads" from the 2002 Moscow Treaty, but rather on the New START counting rule which counts as little as five percent of the number of bomber warheads that could be available. Russia declared 1,537 warheads under New START, but the actual number of operationally deployed strategic nuclear warheads could be about 1,000 higher. *RIA Novosti* reports that Russia plans to retain 2,100 warheads under New START.⁴⁴ Former Duma Deputy Chairman of the Defense Committee Alexei Arbatov mentioned the possibility of 3,000. Much larger numbers are also possible and would be perfectly legal under New START. The irony is that this is being done under the guise of nuclear arms reductions.

The New START Treaty will not reduce Russian strategic forces from the numbers that existed at entry into force, the normal objective of any arms control agreement. New START supporter Pavel Podvig suggests the value of the Treaty is in transparency: “Numbers alone, however, don’t tell the whole story. In fact, they aren’t all that important. Whether it is 1,550 warheads or 500 warheads, it’s far too many. What is important is that the treaty provides the public with a way to hold the U.S. and Russian governments accountable for the nuclear weapons they possess.”⁴⁵ This is a rather modest objective for arms control treaties and it begs the question of who in Putin’s Russian autocracy effectively is going to hold the Russian government responsible for anything?

Moreover, little in New START provides the public information concerning what is going on in relation to strategic nuclear forces. Podvig ignores the fact that the United States under the 2002 Moscow Treaty has been publicly releasing the number of its operationally deployed strategic nuclear warheads since 2003, while the Russians have not. However, Podvig did notice that under the New START Treaty data was not released until June 2011, and the amount of data released was a fraction of what was permissible under New START and far less than what was made available under the old START Treaty.

The New START Treaty’s loopholes are important because they will be exploited **only** by Russia to increase its nuclear strike capability. Russia is modernizing its strategic forces while the United States is not, and some members of the administration appear to be thinking about unilateral reductions. Unless U.S. defense policy is radically changed, the only issue for the next 20 years is what portion of our existing capabilities we will retain. It is already evident that the lack of constraints in New START is leading to increased Russian force levels. For example, Russia has officially announced it is developing a new heavy ICBM which will be deployed by 2018.⁴⁶ Prior to the New START Treaty, Russia was planning a large but not a more powerful “heavy” ICBM. According to Colonel General (ret.) Viktor Yesin, it will be a new, fifth-generation intercontinental ballistic missile, not simply a clone of the “Voyevod” (SS-18) ICBM.⁴⁷

A new heavy ICBM was prohibited by the START Treaty. The 1993 START II Treaty, which never entered into force, would have eliminated all heavy ICBMs as part of a general strategic prohibition on ICBMs with multiple independently targetable reentry vehicles (MIRVs). Indeed, new types of heavy ICBMs were even prohibited by the “fatally flawed” 1979 Strategic Arms Limitation (SALT) II Treaty, which also had a number of other restrictions on heavy ICBMs. Even the least effective pre-Obama strategic arms control agreement, the 1972 SALT Interim Agreement on strategic offensive forces, numerically limited heavy ICBMs. Under New START, the lethality of the new Russian heavy ICBM is unlimited because no limits on the throw-weight of ICBMs were included in the Treaty.

Inexplicable Counting Rules

The New START Treaty is supposed to reduce deployed strategic nuclear weapons by 30 percent. One of the main reasons this will not happen is the bomber weapons counting rule. This rule is completely inconsistent with the stated Obama administration objective of reducing strategic nuclear weapons. As noted above, Russian Major General (ret.) Vladimir Dvorkin has pointed out, the actual number of Russian bomber weapons was over 850, while the accountable number was 77. The *New York Times* quoted Hans Kristensen of the Federation of American Scientists as estimating that the number for Russia would be 860.⁴⁸ That is just the

number of long-range nuclear air-launched cruise missiles (ALCMs) that can be mounted on Russia's existing bomber force. Using the 2002 Moscow Treaty's counting rule of "operationally deployed strategic nuclear warheads" (the number mounted on bombers and in bomber weapons storage areas), the number might be much higher. In addition to nuclear ALCMs, the Russians have other types of nuclear weapons for bomber aircraft. *RIA Novosti* reported, "Under the Treaty, one nuclear warhead will be counted for each deployed heavy bomber which can carry 12-24 missiles *or bombs*, depending on its type" (emphasis added).⁴⁹ In testimony before the Senate Foreign Relations Committee, former Under Secretary of State Robert Joseph concluded that, "Because bombers, no matter what they are loaded with, are counted as 'one,' both parties could increase deployed warheads beyond 2,200."⁵⁰ In the words of Ben Lerner of the Center for Security Policy, "...Russia's ongoing drive to modernize its nuclear forces made this counting rule particularly worrisome."⁵¹

The number of nuclear cruise missiles, short-range missiles or bombs that Russian bombers can carry is not even limited in the New START Treaty because the Treaty eliminated the START prohibition on more than 16-20 long-range nuclear air-launched cruise missiles per bomber. The actual number permitted under New START is whatever number of nuclear weapons can be mounted on the bombers, taking into account technological improvements and how many new bombers are produced. New START also omitted the START prohibition on "arsenal" aircraft, which can carry very large numbers of nuclear cruise missiles. Absent a prohibition on arsenal aircraft and a limit on the number of nuclear cruise missiles that can be carried on bombers, large transport aircraft could be converted into cruise missile carriers. These would be counted as one warhead against the 1,550 limit. Yet they could carry a very large number (perhaps even 50-100) of nuclear long-range, air-launched cruise missiles—certainly far more than existing bombers can carry. Even some true believers in arms control (defined here, courtesy of Richard Perle, as people who never met an arms control agreement they did not like) have had to hold their nose at the bomber weapons counting rule. According to Peter Baker writing in the *New York Times*, Hans Kristensen, said the bomber weapon counting rule is "totally nuts" and the rule "frees up a large pool of warhead spaces under the treaty limit that enable each country to deploy many more warheads than would otherwise be the case..."⁵²

Kristensen is correct but the implications are even worse than what he states for any future arms control agreement. If one assumes any reasonable number of deployed warheads in a post-New START agreement, adds the 850 bomber weapons that can be carried on Russian bombers at the cost of 77 warheads under the New START counting rule, and then adds both of these numbers, it is clear that the reductions are largely illusory. Moreover, the 850 number is not a limit. It is just the delivery potential of the existing Russian bomber force with existing cruise missiles. Notably, Russia is now developing a new strategic bomber. According to then-Prime Minister Vladimir Putin, "After the fifth-generation fighter jet, we must think and get down to work on a next-generation, long-range aircraft, our new strategic missile carrier."⁵³ There is nothing in New START that significantly restricts the number of bombers that Russia can produce or limits the number of nuclear warheads that each bomber can be designed to carry. The actual limit is whatever number of nuclear bombers weapons the Russians can afford and how soon they can develop and deploy them.

Under Secretary of State Ellen Tauscher, when asked for an explanation of the bomber weapons counting rule at the White House announcement of New START, could not come up

with a reason other than, “Well, it’s the approach that we both agreed to.”⁵⁴ The 2010 Nuclear Posture Review (NPR) conjured up an obvious after-the-fact rationalization of the outcome: “This counting rule was adopted in recognition of the fact that heavy bombers do not pose a first-strike threat to either side, and that on a day-to-day basis few or no bombers are loaded with nuclear weapons.”⁵⁵ This rationalization is fundamentally inconsistent with the stated objective of the Obama administration to reduce nuclear weapons. Moreover, in light of the 2010 NPR decision to leave bombers off alert, the supposed rationale for the bomber weapon counting rule makes no sense because it does not enhance stability. A few nuclear warheads in a surprise first strike could eliminate hundreds or even a thousand or more bomber weapons. A decision made during the Bush administration, and continued in the 2010 NPR, reduced the U.S. nuclear bomber force to three bases.⁵⁶

The Obama administration’s arms control bureaucracy could not explain the bomber weapon counting rule. Rose Gottemoeller, assistant secretary of state for verification, compliance and implementation and chief U.S. negotiator in the post-START negotiations, told the Senate Foreign Relations Committee that, “the parties agreed to an attribution rule of one warhead per nuclear-capable heavy bomber rather than count them as zero.”⁵⁷ This completely ignored the outcome of the 2002 Moscow Treaty, which counted weapons actually on bombers or stored at bomber base weapons storage areas. This was clearly not the only choice the Obama administration had. The New START bomber weapon counting rule is a product of an extremely flawed approach to the conduct of arms control negotiations.

The outcome on bomber weapons counting was apparently not what the Obama administration initially proposed. Kingston Reif, the director of nuclear non-proliferation at the Center for Arms Control and Non-Proliferation and a defender of New START, has written, “we do know that the U.S. wanted to count and verify the actual number of warheads on U.S. and Russian bomber bases. However, Russia refused...”⁵⁸ Pavel Podvig also reports that, “The United States said that it was ready to count bombers with their actual weapons load, but Russia objected to the transparency provisions that this arrangement would entail.”⁵⁹ Hans Kristensen has stated, “According to U.S. officials, the United States wanted the New START Treaty to count real warhead numbers for the bombers but Russia refused to prevent on-site inspections of weapons storage bunkers at bomber bases.”⁶⁰ Thus, the bomber weapons counting rule in New START is a significant concession to Russia.

Russia is almost certain to exploit this loophole. Bombers continue to play a key role in Russian nuclear strategy. During the Russian Stability 2008 nuclear exercise, Russian Air Force spokesman Lt. Colonel Vladimir Drik revealed that the bombers would test launch the “entire set” of cruise missiles carried by that type of bomber (TU-95 and TU-160).⁶¹

The suggestion by New START supporters that the bomber weapons counting rule is in the interest of the United States is untrue. The United States cannot exploit this counting rule as long as current policy continues. Even Senator Richard Lugar (R-IN) who supported the counting rule pointed out, “...the Air Force plans to retire, without a follow-on system, our nuclear-capable ALCMs. Russia has announced plans for a new heavy bomber and a new nuclear-capable ALCM, and while the recent U.S. Nuclear Posture Review concluded the United States will maintain a triad of nuclear forces—including bombers—no modernization plan exists for this leg of the triad.”⁶² The Obama administration later announced a program for a follow-on ALCM but its slow development gives it little relevance to New START.

Russia has more heavy bombers than the number of nuclear-capable heavy bombers the Obama administration will retain under New START (76 for Russia vs. 60, at most, for the United States), and the United States does not have enough cruise missiles to fully arm the nuclear-capable bombers it will retain. Russia has begun production of new nuclear strategic cruise missiles (presumably the KH-102 nuclear ALCM), in 2011 while the United States won't do so until 2026 at the earliest.⁶³

Loopholes That Undermine the Treaty Limitations

There are a number of provisions in the New START Treaty that allow intercontinental-range nuclear strike forces outside of any restrictions under the New START Treaty. As a result, there is no limit in New START on the number of strategic-range nuclear warheads that can be deployed. The size of Russia's strategic nuclear forces completely depends on its financial resources should Moscow choose to exploit the loopholes in New START. Several examples of these loopholes and how each could be exploited are discussed below.

No Prohibition of Nuclear Air-Launched Ballistic Missiles

The Heritage Foundation has pointed out that the New START bomber weapon counting rule also creates the opportunity for Russia to deploy more ballistic missile warheads than are supposedly allowed under the New START Treaty:

In addition, several dozen prohibitions and limits in START I's Article V are completely gone (replaced by two limits on ballistic missile defense). For example, unlike START I, there are no prohibitions on placing intercontinental ballistic missiles (ICBMs) on bombers, a delivery mode tested by the United States decades ago, and the START I limits on the maximum number of warheads that a ballistic missile can carry do not appear in New START. Consequently, for the count of one warhead and one delivery vehicle, Russia could deploy aircraft loaded with MIRVed ICBMs (i.e., missiles with multiple independently targetable reentry vehicles).⁶⁴

There has already been press discussion in Moscow on how to circumvent the New START limitation of deployed nuclear warheads by deploying long-range ballistic missiles on bombers. Mikhail Arutyunovich Kardashev, a Russian military analyst, wrote that an air-launched ICBM could be promptly created at a relatively small cost on the basis of the Il-76 military transport and the Sineva intercontinental-range SLBM.⁶⁵ Kardashev was incorrect about the use of an unmodified Sineva which is prohibited by New START, but a modified Sineva or any other "new type" of ballistic missile can be so employed. New START changes the original START "new type" rule by reducing the required changes that create a "new type." Thus, it is easy to turn the Sineva into a missile that is not a Sineva type and, hence, one that can be deployed on aircraft outside of New START Treaty constraints. The Sineva reportedly can carry 10 nuclear warheads. The lack of any prohibition or limitation of nuclear air-launched ballistic missiles (ALBMs) interacts with the New START definition of a "heavy bomber" to permit medium bombers with full intercontinental strike range which are not subject to the New START Treaty. The original START definition of "heavy bomber" was designed to prevent aircraft with a range sufficient to permit two-way unrefueled attacks on the United States or the Soviet Union escaping coverage. The core of the START definition of heavy bombers reads:

36. (112) The term “heavy bomber” means a bomber of a type, any one of which satisfies either of the following criteria:

(a) its range is greater than 8000 kilometers; or

(b) it is equipped for long-range nuclear ALCMs.

A bomber shall not be considered to be a heavy bomber if it meets neither criterion (a) nor criterion (b), or if otherwise agreed.

The START definition precluded medium bombers with a radius of action of over about 4,000 km. Since the START definition of a long-range nuclear “ALCM” is a cruise missile with a range of over 600 km, the maximum strike radius of a START Treaty-constrained medium bomber was about 4,600 km, which is less than the ICBM definition of 5,500 km, the shortest distance between the United States and Russia. The New START Treaty, while changing the heavy bomber definition to make it less verifiable (to be discussed in the next chapter), retained the core of the original START definition without taking into account that long-range nuclear-armed ASBMs were no longer prohibited. Thus, if a 10,000-km range ASBM is carried by a medium bomber, or on a smaller transport aircraft that does not meet the heavy bomber definition, it has a strike range of 14,000 km on a two-way mission and yet would not count at all under New START. This exceeds the range of any New START accountable strategic delivery vehicle. Even a 6,000-km range ASBM could give a medium bomber a strike range equal to most New START-accountable strategic delivery vehicles.

It is not necessary to put ICBM-range ASBMs on a medium bomber to increase considerably the threat to U.S. allies. The loss of this restriction impacts considerably the arms control regime in Europe which has been dominated by the complete elimination of ground launched intermediate-range missiles—missiles with ranges of 500-5,500 km. The elimination of the prohibition of nuclear ASBMs of over 600 km range opens up the option of circumventing the Intermediate-Range Nuclear Forces (INF) Treaty by mounting such missiles on medium bombers or, depending on their size and weight, even possibly light bombers or large fighter aircraft. High-altitude air launch considerably increases the range of smaller tactical ballistic missiles. The impact of this omission is likely to be very one-sided since there is no indication that the Obama administration is interested in any such weapon for either a conventional or nuclear mission.

The Russians have Backfire medium bombers, Su-24 light bombers and large numbers of fighter-bombers that can be used to launch smaller nuclear ASBMs. The original START Treaty contained a commitment to numerically limit the Backfire bomber. This was deleted from New START.

No Prohibition on Long-Range Nuclear Surface Ship-Launched Ballistic Missiles

New START removed the START restriction on surface ship-launched ballistic missiles. As summarized in the Heritage Foundation report on New START:

In addition, unlike START I, New START appears to allow nuclear-armed ICBM-range missiles to be emplaced on surface ships in unlimited numbers, again with unlimited numbers of nuclear warheads. This option again follows from New START’s elimination of all START I Article V limitations and prohibitions. The New START Treaty does

prohibit deploying SLBM launchers on surface ships. However, launchers for any other type of nuclear-armed missile of intercontinental range can be deployed as long as the missile is not classified as an SLBM under New START.⁶⁶

In light of the military utility of such missiles and their ability to circumvent both New START and the INF Treaty, it is possible that the Russians will eventually deploy missiles of this type. While this author is unaware of any discussion yet in the Russian press, the omission of the START prohibition from the New START Treaty creates an opportunity for an additional Russian nuclear strike capability.

Omission of Prohibitions on Other Potential Nuclear Delivery Vehicles

New START also eliminates START provisions related to prohibiting a broader array of nuclear delivery systems. The START provisions read:

Each Party undertakes not to produce, test, or deploy:

(a) ballistic missiles with a range in excess of 600 kilometers, or launchers of such missiles, for installation on waterborne vehicles, including free-floating launchers, other than submarines. This obligation shall not require changes in current ballistic missile storage, transport, loading, or unloading practices;

(b) launchers of ballistic or cruise missiles for emplacement on or for tethering to the ocean floor, the seabed, or the beds of internal waters and inland waters, or for emplacement in or for tethering to the subsoil thereof, or mobile launchers of such missiles that move only in contact with the ocean floor, the seabed, or the beds of internal waters and inland waters, or missiles for such launchers. This obligation shall apply to all areas of the ocean floor and the seabed, including the seabed zone referred to in Articles I and II of the Treaty on the Prohibition of the Emplacement of Nuclear Weapons and Other Weapons of Mass Destruction on the Seabed and the Ocean Floor and in the Subsoil Thereof of February 11, 1971;

(c) systems, including missiles, for placing nuclear weapons or any other kinds of weapons of mass destruction into Earth orbit or a fraction of an Earth orbit;

(d) air-to-surface ballistic missiles (ASBMs);

(e) long-range nuclear ALCMs armed with two or more nuclear weapons.

All of these systems are technically possible and there are a number of plausible ways to economically increase the number of strategic nuclear warheads and delivery vehicles due to the omission of these prohibitions.

No Limitation of Rail-Mobile ICBMs

Rail-mobile ICBMs are not constrained in any way by the New START Treaty. Despite this, the Obama administration continues to assert that rail-mobile ICBMs, if deployed, would be covered by the New START Treaty. Yet no reasonable legal analysis of the Treaty can justify this conclusion. The Heritage Foundation New START report summed up the reasons why:

The START I limits, definitions, verification provisions, and provisions for bringing a rail-mobile launcher into accountability are all gone. The generic New START definition of ICBM launcher does not describe a Russian-style rail-mobile ICBM launcher. New START deletes entirely all the START I definitions related to rail-mobile ICBMs. The START I rail-mobile ICBM launcher definition is quite different from the generic launcher definition in New START. The START I rail-mobile launcher definition reads, "The term 'rail-mobile launcher of ICBMs' means an erector-launcher mechanism for launching ICBMs and the railcar or flatcar on which it is mounted."

The New START definition of a mobile ICBM launcher to be limited by the Treaty appears not to limit rail-mobile ICBMs because the definition of a mobile ICBM in New START describes a road-mobile launcher, not a rail-mobile launcher. It reads, "an erector-launcher mechanism for launching ICBMs and the self-propelled device on which it is mounted." The START I definition of mobile ICBM launcher specifically included a "road-mobile launcher of ICBMs or a rail-mobile launcher of ICBMs." The key point here is that all of the START I limits and definitions related to rail-mobile ICBMs have been deleted from New START. It contains not a single word about rail-mobile launchers or rail-mobile ICBMs. There is nothing in the New START Treaty about when they would come into accountability or how they would be removed from accountability. Such procedures are essential to any claims of limitation on rail-mobile ICBM systems. A treaty amendment will be required if rail-mobile ICBMs are to be limited.

A similar analysis of New START and rail mobile ICBMs was published by former Assistant Secretary of State Christopher Hill. He noted,

New START would seem to allow a party to have unlimited numbers of rail-mobile launchers deployed with nuclear-armed missiles, at least if these missiles are not actually uploaded. In such a scenario, if you gave the signal, all your rail-mobile launchers could be uploaded with MIRVed missiles in extremely short order, but prior to that point, none of these launchers or missiles or warheads would fall within treaty limits: you could have as many as you like. With a suitable investment in such systems, in other words, one could lawfully linger only a few hours away from a sort of 'add-water-and-stir' strategic breakout capability. Since Russia is presently building mobile ICBM systems and we are not, some Senators might find this possibility worrisome.⁶⁷

During the New START negotiation there were reports in the Russian press, including a statement by a Russian general, that the Russian government was discussing the deployment of rail-mobile ICBMs.⁶⁸ In December 2010, Yuiy Solomonov, the chief missile designer at Russia's main ICBM design bureau, said the design work for a rail-mobile ICBM was complete, but their development was deemed inexpedient.⁶⁹ In July 2011, Russian Defense Minister Anatoliy Serdyukov mentioned a new missile, the "Avangard," which may be a rail mobile ICBM.⁷⁰

Senator Jon Kyl (R-AZ) pointed out the failure of the Senate Resolution of Ratification to deal with the rail-mobile ICBM problem. Senator Kyl stated that he was concerned that if the Russians actually build rail-mobile ICBMs they will not be covered by the Treaty. He said, "It is clear from the [Senate Foreign Relations Committee] report that the language would not cover rail-mobile systems if Russia were to reintroduce them. It is clear we would have to rely upon

the Russians' good offices, good intentions, to reach some kind of an agreement with us in the Bilateral Consultative Commission. There are no assurances that will be done."⁷¹

The U.S. Senate New START Resolution of Ratification's treatment of this issue is inconsistent with language in the Treaty and probably makes the problem worse. It declares that an ICBM launched from a rail-mobile launcher would be considered an ICBM. The problem is that ICBMs are not numerically limited under New START (only launchers and warheads are limited). Furthermore, the Resolution of Ratification says "an erector-launcher mechanism for launching an ICBM and the rail car or flatcar on which it is mounted would be an ICBM launcher" and goes on to require any change in the Treaty involving mobile ICBMs "considered to be an amendment to the New START Treaty...and will be submitted to the Senate for advice and consent."⁷² The language is problematical because it contradicts the text of the New START Treaty's mobile ICBM definition. Moreover, in the 40-year history of strategic arms control agreement implementation, no strategic nuclear arms control agreement has ever been amended.

Konstantin Kosachyov, the head of the Russian State Duma's International Affairs Committee, took very strong exception to the effort by the Senate Foreign Relations Committee "to apply the New START Treaty to rail-mobile ICBMs in case they are built."⁷³ For a time he even revoked the Committee's endorsement of New START over this issue.

No Limitation on Soft-Site Launchers

The term "soft-site launcher" is something of a misnomer because there is nothing in the New START Treaty that requires them to be "soft." The New START Treaty definition states, "The term 'soft-site launcher' means any land-based fixed launcher of ICBMs or SLBMs other than a silo launcher."⁷⁴ They can be super-hardened, aboveground launchers. They are completely unlimited by New START. Soft-site launchers were not regarded as very threatening under START because of the relatively high number of allowed launchers and nuclear warheads, and because of the small number of facilities at which they could be located in START. Under START, space launch facilities were specialized facilities for using ICBMs and SLBMs to launch satellites and other space missions. They were restricted in number and limited in many ways. Under New START, the number of space launch facilities is unlimited. Moreover, New START deletes a START provision which prohibits flight-testing from space launch facilities of ICBMs or SLBMs equipped with reentry vehicles. Space launch facilities were only allowed to launch ICBMs or SLBMs for satellite launch. Such facilities were limited in number in START but not New START. This makes it much easier to exploit them for military purposes.

No Prohibition of Rapid Reload

The START Treaty contained a provision that prohibited rapid reload of ballistic missiles. New START does not. Instead, it contains a cleverly worded provision that gives the impression of a prohibition without actually creating one. It reads, "The Parties agree that the production, testing, or deployment of systems designed for the rapid reload of ICBM launchers and SLBM launchers is unwarranted and *should* not be pursued by either Party" (emphasis added).⁷⁵ "Should" creates no legal obligation not to produce, test or deploy systems for rapid reload.

No Limitations on Non-Deployed Mobile ICBMs

The absence of a prohibition of rapid reload is made worse by the lack of any provision in New START limiting the number of mobile ICBMs that can be produced and made available for rapid reload. START limited them to no more than 250, of which no more than 125 could be rail-mobile. The number of such missiles could have been reduced in New START in line with the objective of cutting nuclear arms. Instead, the New START Treaty dispenses with limits on non-deployed mobile ICBMs as well as any limits on rail-mobile ICBMs. The combination of no prohibition on rapid reload and no limitation on the number of mobile ICBMs that can be stockpiled creates the possibility of unlimited circumvention of the New START Treaty and, indeed, the INF Treaty. For example, a MIRVed intermediate-range ballistic missile (IRBM) could legally be tested under New START as an ICBM by simply flying it in one test with a single warhead to a range of over 5,500 km. It could be then deployed on rail-mobile launchers as what amounts to a MIRVed IRBM and would be completely outside of both New START and the INF Treaty. There has been talk in Moscow of converting the SS-27 into an IRBM.⁷⁶ This would be easy because of the changes in the New START “new type rule.”

No Limits on Non-Strategic or Tactical Nuclear Weapons

One of the most glaring defects of the New START Treaty is the absence of any limitation of “non-strategic” or “tactical nuclear weapons.” Alexei Arbatov, former vice chairman of the Duma’s Defense Committee and currently a corresponding member of the Russian Academy of Sciences and head of the World Economics and International Relations Institute’s International Security Center, described tactical nuclear weapons as dual-use delivery vehicles, such as medium bombers, fighter-bombers, short-range offensive missiles and air defense missiles, nuclear weapons of ships and submarines, and large-caliber tube artillery. He added that these delivery vehicles were deployed on dual-use launchers, multipurpose ships and attack submarines.⁷⁷ What Mr. Arbatov described is the current Russian tactical nuclear stockpile. In contrast, the United States has only one type of tactical nuclear weapon and maintains a very small stockpile of warheads for those weapons. An enormous disparity had developed because of dramatically different views in Russia and the United States over the role and utility of tactical nuclear weapons.

The Congressional Commission on the U.S. Strategic Posture reported that, “Senior Russian experts have reported that Russia has 3,800 operational tactical nuclear warheads with a large additional number in reserve.”⁷⁸ In November 2011, Principal Deputy Under Secretary of Defense James Miller stated that Russia had 2,000-4,000 tactical nuclear weapons.⁷⁹ The disparity in tactical nuclear weapons is about ten to one.⁸⁰

Other estimates of Russian capability are much higher. According to Interfax-AVN, in April 2011, Colonel General (ret.) Viktor Yesin stated that “the Russian arsenal of tactical nuclear weapons is estimated differently in the world from tens of thousands to 4,000-4,500.”⁸¹ While tens of thousands is much too high, at least after the 1990s, it is interesting to note that the 4,000-4,500 weapon estimate is higher than the one that General Yesin used at a 2008 meeting of the U.S. Nuclear Strategy Forum that this author attended.

According to Alexei Arbatov, then Vice Chairman of the Duma’s Defense Committee, under the nuclear strategy that Putin signed into effect, apparently the focus was on primarily on tactical nuclear weapons, although a selective first strike with strategic nuclear forces also is possible.⁸²

Arbatov himself, who is clearly one the most moderate Russians on national security policy, continued “minimal deterrence” was not compatible with Russian military doctrine which holds that nuclear weapons were not only used for the purpose deterrence but also seen as a military response to large scale aggression.

Thus, we have a Russian moderate advocating arms control as a means of enhancing the credibility of tactical nuclear weapons use. Arbatov went on to say that Russia could not maintain its forces at the START level (around 5000-6000 warheads), and as a result:

if we have, say, 1500 warheads in our SNF [Strategic Nuclear Forces], it will not be a matter of indifference to Russia whether the U.S. (and other powers in the future) have 2000 or 3500 or 5000 nuclear warheads, and what sort of systems they are deployed in.

Thanks to the inside-the-beltway politics of arms control in the United States, Russia has actually achieved the objective of reducing U.S. strategic nuclear forces without agreeing to any reductions in Russian tactical nuclear weapons, or, indeed, even being asked to make any reductions in these weapons. In fact, according to Vice Admiral (ret.) Robert Monroe, “For the past 20 years, Russia’s principal nuclear weapons activities have been focused on advanced tactical nuclear weapons – research, testing, and production of next generation weapons.”⁸³

Russia is reportedly forward deploying tactical nuclear weapons. Swedish Foreign Minister Carl Bildt and Polish Foreign Minister Radek Sikorski confirmed that Russian tactical nuclear weapons had been deployed in “substantial” numbers in “Kaliningrad region and the Kola Peninsula...”⁸⁴ Lithuanian Defense Minister Rasa Juknevičienė also stated that, “It’s no secret that such weapons [nuclear weapons] are deployed near us, in Kaliningrad. And to our East as well.”⁸⁵ When deployed in these areas, tactical nuclear weapons are a direct threat to NATO.

According to Alexei Arbatov, the medium-range component of Russian non-strategic nuclear weapons consists of about 500 tactical nuclear aircraft missiles and bombs for the 120 Tu-22M medium-range bombers and for the 400 Su-24 frontal aviation bombers. In addition, there were about 300 nuclear weapons for aircraft missiles, free-fall bombs and depth charges for naval aviation.⁸⁶ In September 2007, Colonel General (ret.) Viktor Yesin wrote that with regard to tactical and operational-tactical nuclear systems, Stockholm International Peace Research Institute estimated the quantity of nuclear munitions on deployed delivery vehicles at the start of 2006 was 2,180 weapons, of which 1,730 were air-to-surface cruise missiles and bombs intended for Tu-22M3 and Su-24 strike aircraft, 240 were sea-launched cruise missiles, and 210 were antisubmarine warfare weapons.⁸⁷ These are not trivial numbers, especially in relationship to the notional level of 1,550 deployed strategic warheads in New START. They can be used against the same types of targets that the United States must cover with strategic missiles.

The tactical nuclear weapon asymmetry problem could have been addressed in New START, but was not. Even the original START Treaty contained a political commitment by both the United States and the Soviet Union to limit the deployment of long-range nuclear submarine-launched cruise missiles (SLCMs) and a commitment by the Soviet Union to limit deployed nuclear SLCMs. The Heritage Foundation report on New START noted:

The Obama Administration’s Nuclear Posture Review announced the elimination of U.S. nuclear sea-launched cruise missiles. In contrast, according to RIA Novosti in an article published during the New START negotiations, the new Russian “Graney-class nuclear

submarines combine the ability to launch a variety of long-range cruise missiles (up to 3,100 miles) with nuclear warheads, and effectively engage submarines, surface warships and land-based targets.” According to the Deputy Commander of the Russian Navy, Vice Admiral Oleg Burtsev, Russia can “focus” on low-yield tactical nuclear weapons for these submarines. Just after the signing of New START, RIA Novosti reported that the new Graney class submarines will also be carrying a 5,000-km range nuclear SLCM. A 5000-km range nuclear cruise missile would allow Russian submarines from a single launch point to hit targets in the United States and Europe.

The Heritage Foundation also pointed out the absurdity of agreeing to constrain conventional weapons, a point that will be discussed below, while ignoring entirely the threat posed by long-range tactical nuclear weapons. In addition to omitting the START constraint on nuclear SLCMs, New START eliminated the political commitment in the START Treaty that constrained Backfire bombers. While the specific numbers from the original START Treaty (500 Backfire bombers and 880 deployed nuclear SLCMs) would not have been relevant in the context of New START numbers, reducing the numbers by a factor of ten from the old START numbers would have made them very relevant. Instead, we gave the Russians easy and cheap ways to circumvent the New START Treaty limitations.

The lack of New START limitations on tactical nuclear weapons contrasts starkly with the inclusion of conventionally-armed ballistic missile warheads in the treaty’s warhead limit. This is a departure from the 2002 Moscow Treaty, which limited only deployed strategic nuclear warheads. The undisputable fact, as the Heritage Foundation analysis concluded, is that New START ignores the military implication of tactical nuclear weapons which have yields up to hundreds of thousands of tons of TNT and delivery vehicles with significant ranges. The New START Preamble has no reference to tactical nuclear weapons. Yet tactical nuclear weapons are literally thousands or even hundreds of thousands of times as powerful as conventional weapons.

The complete omission of any constraints on tactical nuclear weapons from the New START Treaty is particularly striking in light of what the Clinton administration attempted to achieve in the START III negotiations. Robert Bell, when serving in the Clinton administration as senior director for defense policy and arms control on the National Security Council staff, characterized the Clinton position as follows:

Our vision on START III is an agreement that goes beyond START II in terms of further reductions: it addresses the issue of tactical nuclear weapons in meaningful ways; and begins to grapple with and put in place the necessary building blocks of a new kind of arms control treaty that would actually constrain the storage and disposition of warheads and not simply limit the deployment of the launchers that carry those weapons.⁸⁸

The Obama administration’s explanation of why it didn’t attempt to negotiate limits for non-strategic nuclear weapons in New START was stated by Secretary of State Hillary Clinton:

A more ambitious treaty that addressed tactical nuclear weapons would have taken much longer to complete, adding significantly to the time before a successor agreement, including verification measures, could enter into force following START’s expiration in December 2009. Because of their limited range and different roles, tactical nuclear

weapons do not directly influence the strategic balance between the United States and Russia.

President Medvedev has expressed interest in further discussions on measures to further reduce both nations' nuclear arsenals. The Russians are concerned with the totality of the U.S. nuclear stockpile, the upload capability of our strategic ballistic missiles as well as U.S. tactical weapons located in Europe. Also, Article VI of the Nuclear Nonproliferation Treaty (NPT) stipulates that nuclear weapons states are to work toward achieving nuclear disarmament. The Russians are sensitive to world opinion and want to be seen as favorably working towards this goal. As stated in the April 2010 Nuclear Posture Review and by the President at the signing of the New START Treaty in Prague, we intend to raise strategic and tactical nuclear weapons, including nondeployed nuclear weapons, in those discussions.⁸⁹

The suggestion that the Russians would be forthcoming on limiting non-strategic nuclear weapons was misleading. Russian opposition to limiting tactical nuclear weapons has been consistent since the START III negotiation in the 1990s. Russia has become no more flexible on this issue following the advent of the Obama administration. When asked by the Senate why New START addresses only strategic weapons, U.S. Secretary of State Hillary Clinton admitted "[the Russians] were not willing to negotiate on tactical nukes."⁹⁰ Based on then-Assistant Secretary of State Rose Gottemoeller's interview with Interfax in April 2009, it appears Russia was not even asked to talk about tactical nuclear weapons in the context of New START.⁹¹

As Alexei Arbatov said in April 2011, Russia will not hold negotiations on tactical nuclear weapons until the United States withdraws its missile defense system from Europe.⁹² The withdrawal of U.S. tactical nuclear weapons from Europe has always been one of Russia's main objectives. In September 2007, Colonel General Vladimir Verkhovtsev, who then headed the defense ministry's nuclear weapons organization, said that Russia can only begin talks with the United States about reducing tactical nuclear weapons if Britain and France are also involved. If the United States were to accede to this demand, there would never be an agreement limiting tactical nuclear weapons because withdrawal of U.S. weapons from NATO/Europe would completely achieve Moscow's objectives. All Moscow is interested in is getting U.S. nuclear weapons out of Europe. It does not wish to limit its own tactical nuclear capability in any way. After the ratification of New START, RIA Novosti reported that senior Russian Senator Mikhail Margelov, who heads the Foreign Relations Committee of the Russian parliament's upper house, said after talks with top U.S. officials in Washington, "Russia's reaction on the prospects for talks on tactical nuclear weapons is, charitably speaking, restrained and cautious."⁹³

Historically, the Russians have repeatedly rejected negotiations on the limiting of tactical nuclear weapons. The Obama administration obviously knew that the Russians were not going to agree to negotiations on tactical nuclear weapons, as was later repeatedly stated during their Duma ratification process. During the New START negotiations, Russian Foreign Minister Sergei Lavrov was asked, "What would Russia be prepared to do if the United States moved on your proposal, in terms of its tactical nuclear weapons? Would it be prepared to provide better transparency for instance, consolidate its tactical weapons, and disclose how it has met its commitments under the Presidential Nuclear Initiatives of 1991?" He responded, "...I can only remark that U.S. tactical nuclear weapons in Europe, for all practical purposes, are part of the U.S. strategic arsenal."⁹⁴ This is an old Soviet-era position.

In an effort to rationalize its handling of tactical nuclear weapons in New START, the Obama administration distorted the recommendation of the Congressional Commission on the Strategic Posture of the United States. The Commission stated that, “Deferring negotiations on tactical nuclear weapons until after a START successor agreement had been concluded was also the unanimous recommendation of the Perry-Schlesinger Congressional Strategic Posture Commission in the spring of 2009.”⁹⁵ What the Commission actually said about non-strategic or tactical nuclear weapons was that, “The imbalance favoring Russia is worrisome, including for allies, and it will become more worrisome as the number of strategic weapons is decreased. Dealing with this imbalance is urgent and, indeed, some commissioners would give priority to this over taking further steps to reduce the number of operationally deployed strategic nuclear weapons.”⁹⁶

The handling of tactical nuclear weapons in the New START Treaty will make it much more difficult, if not impossible, to achieve any meaningful limitation on tactical nuclear weapons in any post-New START negotiation. Even, perhaps, the strongest proponent of arms control in Russia, Major General (ret.) Vladimir Dvorkin has stated an agreement regarding tactical nuclear weapons would be impossible in the foreseeable future due to verification problems.⁹⁷ The Obama administration’s claim that the United States will seek to “include non-strategic nuclear weapons in the next round of U.S.-Russian arms control discussions alongside strategic and non-deployed nuclear weapons, as Assistant Secretary of Defense Rose Gottemoeller recently stated, lacks realism. The Obama administration did not inform the Senate, as will be discussed in Chapter II, that the United States had offered, and the Russians had rejected, verification proposals that would have been relevant for limiting the number of tactical nuclear weapons.

The sacrifice of 20 percent of the strategic nuclear delivery vehicles of the United States in exchange for no reductions in Russian strategic forces or tactical nuclear weapons will make it very difficult or impossible to negotiate limits on tactical nuclear weapons. When the United States seeks to discuss the issue of tactical nuclear weapons in the post-New START environment, Russia will likely continue to demand removal of all U.S. tactical nuclear weapons from Europe as a precondition to negotiations. As voiced by Russian Foreign Minister Sergei Lavrov, “The first step in solving this problem should be their [U.S. tactical nuclear weapons] removal to the territory of the state that possesses them and destruction of their deployment infrastructure abroad.”⁹⁸ Russia has no tactical nuclear weapons outside of its national territory for the simple reason that it has no real allies.

The Lack of Qualitative Limitations

During the New START ratification debate, the Obama administration received remarkably little criticism for what is one of the most inexplicable defects of the New START Treaty, i.e., the Treaty’s lack of qualitative limitations. Dozens of prohibitions and limitations in START’s Article V are completely missing from New START, replaced by two limits on ballistic missile defense. Indeed, the entire START Treaty Article V was deleted. Yet it is impossible to limit the destructive potential of strategic forces without limiting such critical characteristics as their size and power. Other than the 2002 Moscow Treaty, which was intended to be “the end of arms control”⁹⁹ and which ran concurrent with START constraints, all other strategic arms control treaties contained such qualitative limitations.

The lack of qualitative limitations has exceedingly negative implications specifically with regard to breakout and cheating potential. From an arms control perspective, there is no logic in limiting delivery vehicles to 700 while, simultaneously, allowing each of those 700 to have unlimited destructive potential. Yet that is exactly what the Obama administration did in New START.

Currently, only the Russians deploy a heavy ICBM. Their SS-18 heavy ICBM is about ten times as powerful as a U.S. Minuteman III ICBM.¹⁰⁰ A new Russian heavy ICBM now under development has the potential to have as much or more throw-weight.

The original START Treaty banned “new types” of heavy ICBMs and any increase in the launch weight or throw-weight of heavy ICBMs of an existing type. The elimination of these prohibitions seems to be the basis for the Russian decision to develop a new heavy ICBM. There is a large inconsistency between the Obama administration’s 2010 Nuclear Posture Review, which called for de-MIRVing all U.S. ICBMs, and what New START permits. As the Heritage Foundation New START report pointed out:

All the START I limits on missile launch-weight, throw-weight, and RV numbers (testing and deployment) that were in START I Article II and Article V are absent from New START. Hence, the entire force of ICBMs and SLBMs could be “heavy” MIRVed ICBMs or “heavy” MIRVed SLBMs. It should be noted that the Obama Administration accepts the long-held view that heavily MIRVed ICBMs are particularly destabilizing. This is the reason presented in the Administration’s new Nuclear Posture Review for taking the step of deMIRVing all U.S. ICBMs. Yet, New START literally facilitates the apparent Russian trend to return to MIRVed ICBMs. Since New START also omits the START I limitation on throw-weight and the number of warheads that can be tested on an ICBM or SLBM, there is considerable added potential for breakout under New START. This again may be significant as Russia has announced that it is developing a new heavy ICBM.

The START Treaty constrained the number of warheads attributed to each type of ICBM and SLBM in a number of ways. Article V of the START Treaty provided that:

12. Each Party undertakes not to:

- (a) produce, flight-test, or deploy an ICBM or SLBM with more than ten reentry vehicles;
- (b) flight-test an ICBM or SLBM with a number of reentry vehicles greater than the number of warheads attributed to it, or, for an ICBM or SLBM of a retired type, with a number of reentry vehicles greater than the largest number of warheads that was attributed to any ICBM or SLBM of that type;
- (c) deploy an ICBM or SLBM with a number of reentry vehicles greater than the number of warheads attributed to it;
- (d) increase the number of warheads attributed to an ICBM or SLBM of an existing or new type.

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13. Each Party undertakes not to flight-test or deploy an ICBM or SLBM with a number of reentry vehicles greater than the number of warheads attributed to it.

None of these provisions are found in the New START Treaty. The implications are stark. In 2011, the Russian government announced the deployment in 2018 of a new heavy ICBM which reportedly will carry 10 heavy or 15 medium warheads.¹⁰¹ This is completely credible. During the New START negotiations, ITAR-TASS reported that, “An SS-18 missile can deliver up to 36 warheads, whereas a Minuteman-III missile could deliver no more than 3 warheads.”¹⁰² As few as 20-40 heavy ICBMs with SS-18-class large warheads or the more modern medium warheads would allow Russia to demolish the entire U.S. ICBM force. This is the critical reason qualitative limitations were placed on ICBMs in START and START II.

In its first New START data update, Russia indicated that it had increased the number of its deployed nuclear warheads by 29 despite a reduction of six delivery systems.¹⁰³ The increase in Russian warheads cannot be explained by the small number of MIRVed SS-27s added to the Russian force. The only possible explanation for this is that the Russians are uploading warheads in a manner which would have been prohibited by START but is now allowed by New START. There is likely to be more of this in light the current Russian effort to increase the number of warheads per missile.

Delivery Vehicle Limits that Only Impact the United States

At the beginning of the New START negotiations, Colonel General Nikolay Solovtsov, then-commander of the Russian Strategic Missile Troops, said that no Russian missile launchers will be withdrawn “if they have remaining service life. This approach will remain under the new treaty that will be signed with the USA to replace START-1...”¹⁰⁴ He was correct. Soon after the signing of New START, General Nikolai Makarov, chief of the Russian General Staff, reiterated that the Strategic Rocket Forces will not be reduced.

According to Pavel Podvig:

There is not much really new there—we knew that Russia tried to limit the number of launchers, while the United States wanted to keep the launchers intact. As it turned out, the original U.S. proposal was to have 1100 launchers. By November 2009, the United States was ready to go to 800, while Russia suggested 500. Apparently it took an intervention from the presidents to bring this number to 700, although there was a serious disagreement about how to account for non-nuclear warheads.¹⁰⁵

This provides additional confirmation that the New START outcome represents a significant concession to Russia without any benefit to the United States. The New START limits on deployed strategic delivery vehicles to 700 and the total of deployed and non-deployed to 800 only impacts the United States. As various Russian generals have stated, neither of these limits has any impact on Russia. The final Russian START data declaration revealed that Russia had only a total of 809 accountable delivery vehicles while the U.S. had 1,198. The initial Russian New START data declaration listed 521 New START-accountable deployed strategic delivery vehicles.¹⁰⁶ This should not have been a surprise. As noted above, Russian Defense Minister Anatoliy Serdyukov told the Duma that Russia will not reach the delivery vehicle limit until 2028.

No previous U.S. administration has ever agreed to delivery vehicle limits that have no impact on Russia but that do have an impact on the United States. This is true even in the failed 1970s agreements—the SALT I Interim Agreement and SALT II. The Obama administration dealt with this political embarrassment by agreeing to leave the New START data section completely blank in the Treaty as it was submitted to the Senate for advice and consent. In contrast, the START I document was filled out. Ratification of the Treaty was necessary to find out what was in it.

Limiting Conventional Warheads

The New START outcome regarding the limitation of conventional warheads on ICBMs and SLBMs is dramatically different from the 2002 Moscow Treaty (and previous nuclear arms control treaties) which limited only nuclear warheads. New START represents a major concession by the United States to the Russians on an important issue. The New START Treaty constrains conventional prompt global strike (CPGS) capability in significant ways. However, there are viable options available to pursue this capability if they prove affordable. Unlike the 2002 Moscow Treaty, New START counts both nuclear and non-nuclear warheads and limits both ICBMs and SLBM launchers. Consequently, this will preclude the United States from deploying more than a small number of such systems.

During the New START ratification hearings, the Obama administration typically made comparisons between START and New START but ignored the outcome of the Moscow Treaty negotiation, which only limited deployed strategic nuclear warheads and did not limit the number of deployed ICBMs and SLBMs. As former Undersecretary of State John Bolton wrote, counting only operationally deployed strategic nuclear weapons in the Moscow Treaty, “would free up large numbers of delivery vehicles for conventional warheads, making them more useful against non-nuclear threats we are increasingly facing.”¹⁰⁷

While it is true that under START conventional warheads and conventionally-armed ballistic missiles would have counted, when the START Treaty was negotiated in the 1980s the technology was not available for strategic-range conventional ballistic missiles and they were not an issue. During most of the START negotiation this was not seen as an equity that had to be protected by either side. The technology to make such weapons practical did not yet exist. The one exception to this was the possibility of hypersonic boost-glide vehicles, which surfaced very late in the START negotiation and was an option protected in the final treaty. During the Moscow Treaty and New START negotiations, it was recognized that conventional ballistic missiles had considerable potential. Hence, in the Moscow Treaty this option was protected, including the option to develop and deploy these weapons in the cheapest possible way. This was not the case in New START.

Perhaps the best-protected option for CPGS in New START is for hypersonic boost-glide vehicles. Hypersonic boost-glide vehicles are intentionally excluded from the New START Treaty by the interplay of three START definitions related to ballistic missiles: 1) “The term ‘ballistic missile’ means a missile that is a weapon-delivery vehicle that has a ballistic trajectory over most of its flight path”; 2) “The term ‘intercontinental ballistic missile’ or ‘ICBM’ means a land-based ballistic missile with a range in excess of 5500 kilometers”; and 3) “The term ‘submarine-launched ballistic missile’ or ‘SLBM’ means a ballistic missile with a range in excess of 600 kilometers of a type, any one of which has been contained in, or launched from, a submarine.”¹⁰⁸ A hypersonic boost-glide vehicle is not an ICBM or a SLBM as long as it does

not fly a ballistic trajectory for “most of its flight trajectory.” The New START Treaty defines a cruise missile as a, “missile that is an unmanned, self-propelled weapon-delivery vehicle that sustains flight through the use of aerodynamic lift over most of its flight path.”¹⁰⁹ A hypersonic boost-glide vehicle is not a “cruise missile” because it is not “self-propelled.” It is a glider once detached from its rocket booster. Moreover, the New START Treaty contains no prohibition or limitation on ground-launched cruise missiles.

Like START, the New START Treaty does not distinguish between nuclear and non-nuclear warheads for ICBMs and SLBMs and counts both. According to the New START Treaty Article-by-Article Analysis, “Each such reentry vehicle, including conventionally-armed reentry vehicles, is counted as one warhead.”¹¹⁰ The impact of the New START limit on deployed delivery vehicles is a greater constraint than the agreement to count non-nuclear warheads because it is set at less than half the level of deployed warheads. The limit on deployed delivery vehicles, rather than deployed warheads, becomes the main constraint on conventional ICBM and SLBMs under New START.

The impact of the New START limit of 700 deployed delivery vehicles (deployed ICBMs, SLBMs and heavy bombers) on U.S. strategic forces was sufficiently great that the Obama administration was apparently unable to get agreement within the Pentagon on a specific force structure. As a result, the Department of Defense announced an interim force structure that totaled 720 strategic delivery vehicles.¹¹¹ Absent a single conventional ballistic missile in the force, New START mandates a reduction in operational U.S. strategic delivery vehicles from 882 (the current number in the U.S. force) to 700; this is in addition to the reduction of 196 operational delivery vehicles made during the Bush administration. Having said this, it is true, as the Obama administration contends, that New START allows the United States to deploy CPGS systems, and does not limit or constrain research, development, testing, and evaluation of such concepts and systems. It is possible to deploy a small number of conventional ICBMs and SLBMs under New START limits. The Obama administration’s contention that it is possible to deploy the Bush administration’s proposed CPGS force of 24 conventional Trident missiles is correct, although it would come at the price of a reduced nuclear deterrent capability because it would be necessary to reduce the same number of nuclear delivery vehicles.

The very provisions of New START that allow for an unlimited number of nuclear-armed ballistic missiles outside of the Treaty can be used to deploy conventional ballistic missiles. For example, the United States could deploy air-launched conventional ballistic missiles or deploy conventional ballistic missiles on naval surface ships. Unfortunately, it is more likely that the Russians will exploit these loopholes to obtain an additional nuclear capability outside of the Treaty limits than the Obama administration deploying a conventional strike capability. The termination of the Bush administration program to deploy a new large cruiser probably reduces the chance that conventional ballistic missiles will be deployed on surface ships simply because the smaller replacement vessels (DG-51 Block III) lack the size needed.

There are types of long-range ballistic missiles that are not subject to the New START Treaty that could be used for a long-range conventional strike capability. For example, New START omits the START prohibition on air-launched ballistic missiles and surface ship-launched ballistic missiles with ranges over 600 km. During the ratification hearings this was discussed in relation to missile defense targets but the most significant potential implications are for conventional prompt global strike. The only restriction in New START relating to these systems

is that, "Each Party shall install deployed launchers of SLBMs only on ballistic missile submarines."¹¹² Since the only existing U.S. SLBM accountable under the New START Treaty is the Trident II, any missile other than the Trident II could be deployed on aircraft and surface ships without New START constraints. Indeed, even the Trident II could be so deployed if it is slightly modified. The New START "new type" rule, which is used to distinguish accountable from non-accountable missiles or rockets, requires only a three percent change in the length or diameter of the Trident II first stage to create a "new type" that could be deployed on aircraft or surface ships and would not be subject to New START constraints.

While this is no different than under the original START Treaty where "new type" missiles were protected, the Senate debate over the impact of New START on CPGS made the exclusion very explicit and protects this option from negotiated change without the advice and consent of the Senate. This is particularly important. Otherwise, the New START definitions could be changed without a Treaty amendment.

New START contains a provision for bringing a "new kind of strategic offensive arm" into the Treaty by mutual agreement.¹¹³ According to Principal Deputy Under Secretary of Defense James Miller, "As we made clear during the New START Treaty negotiations, we would not consider such non-nuclear systems, which do not otherwise meet the definitions of the New START Treaty, to be 'new kinds of strategic offense arms' for the purposes of the Treaty."¹¹⁴ This was not an isolated statement but was repeated numerous times during the ratification hearings and is included in the New START Treaty Article-By-Article Analysis.

The Russian ratifications hearings made it clear that the Russian view of conventional prompt global strike and the New START Treaty, to put it mildly, is convoluted and inconsistent. It is more of a political than a legal interpretation. The Russian Resolution of Ratification (which differs from the U.S. resolution in that it is signed into law by the President), starts out by declaring that as a condition of ratification Russia must pursue, "the development, testing, production, and deployment of new types and new kinds of strategic offensive arms that will have advantages for overcoming missile defense."¹¹⁵ Then it establishes a second condition "applying the provisions of the New START Treaty, including those in regard to counting warheads and their means of delivery, in accordance with its terms, to any strategic offensive arms, as well as to any new kinds of strategic-range offensive arms," and immediately contradicts this by establishing a third condition to the effect that, "the question of the applicability of the provisions of the New START Treaty to any new kind of strategic-range offensive arms should be resolved within the framework of the Bilateral Consultative Commission established in accordance with Article XII of the New START Treaty, prior to the deployment of such new kind of strategic-range offensive arms." Perhaps the most amazing statement was made by Russian Foreign Minister Sergei Lavrov, who stated before the Russian Duma, "We find unacceptable the unilateral American interpretation of the treaty according to which future strategic range systems with non-nuclear warheads not meeting the parameters stated in the treaty shall not be regarded as new types of strategic offensive weapons covered by the treaty."¹¹⁶ It is clearly inconsistent with the normal rules of international law concerning treaty interpretation to argue that a weapon "not meeting the parameters" stated in the treaty is somehow covered by the treaty. Russia will seek to pressure the United States to agree to limits on missile defense and conventional weapons as a precondition for discussions on limits on tactical nuclear weapons.

The U.S. Resolution of Ratification precludes acceptance of the Russian position without the advice and consent of the Senate. It protects the option of hypersonic boost-glide vehicles (or, for that matter, powered intercontinental cruise missiles or unmanned aircraft). It contains an “understanding” that states, “future, strategic-range non-nuclear weapon systems that do not otherwise meet the definitions of the New START Treaty will not be ‘new kinds of strategic offensive arms’ subject to the New START Treaty.” Furthermore, the Resolution of Ratification provides that, “any prohibition on the deployment of such systems, including any such limitations or prohibitions agreed under the auspices of the Bilateral Consultative Commission, would require an amendment to the New START Treaty which may enter into force for the United States only with the advice and consent of the Senate, as set forth in Article II, section 2, clause 2 of the Constitution of the United States.”¹¹⁷ A Treaty amendment requires advice and consent of the Senate by a two-thirds vote.

Prohibitions and Provisions on Missile Defense

The Obama administration accepted very flawed language in the New START Treaty on missile defense. Pavel Podvig concluded:

On missile defense, the United States fought quite hard to prevent the statement on relationship between offense and defense from appearing in the text of the treaty. Russia “was adamant” that it was critical to have this in the treaty as a legally binding statement that would have to be ratified by both countries. The United States suggested that the offense defense statement could be included in a separate document, but Russia objected to that, saying that at least one sentence should be in the treaty proper. But it looks like at this stage the United States was willing to accept having the statement in the treaty preamble. At some point it looks like neither side was sure what the status of the issue is, but they knew very well that it is one of the key elements of the process....¹¹⁸

The biggest impact of the New START Treaty on missile defense took place before the conclusion of the Treaty. The Obama administration terminated the Bush administration’s program to defend the United States and Europe with two missile defense sites located in Europe and replaced it with a system designed mainly to defend Europe at U.S. expense. Of most concern was the growing ballistic missile threat from Iran. Former Director of Central Intelligence R. James Woolsey outlined how advanced the Iranian missile threat to the United States had become and noted:

...the Bush administration proposed building a missile-defense site in Europe in addition to those already in place in Alaska and California. This would provide cities on the East Coast, our troops abroad, and our allies in Europe added protection from an Iranian missile attack.

But last September the Obama administration scrapped the Bush plan and replaced it with one called the Phased Adaptive Approach, which is less capable of dealing with threats against U.S. territory. This plan entails deploying mobile systems to Europe to intercept short-range missiles. The Defense Department would gradually upgrade these systems, but the plan offers no added protection for the U.S. until 2020. That’s almost certainly too little too late.¹¹⁹

It is clear that the main reason for the Phased Adaptive Approach (PAA) was to make Russia happy. In that it failed because it was based on a fundamental misreading of the Russian Federation's military/political objectives. In February 2011, RIA Novosti reported, "The minister [Sergei Lavrov] said the fulfillment of the third and fourth phases of the U.S. 'adaptive approach' will enter a strategic level threatening the efficiency of Russia's nuclear containment forces."¹²⁰ The legacy of PAA, even assuming it was a good idea for the United States to pay exclusively for a defense of Europe, is that it can't defend the United States for a long time, if ever. It was a seriously flawed defense concept, particularly with regard to sensors. The substitution of the Bush concept of a large missile tracking radar with unmanned aircraft-based sensors eliminated most of the ability to defend anything without strategic warning. Defending the United States was put off to the fourth phase of the PAA, and that was based on a conceptual interceptor that did not exist and would take almost a decade to develop.

The Obama administration's claim that the PAA, "deploys proven capabilities and technologies to meet current threats" was inaccurate because only the first phase of the system was based upon "proven capabilities."¹²¹ The reality was that most of the announced components of the PAA existed only on briefing slides. The most effective elements of the Bush missile defense program were terminated. The Bush administration's components were replaced by elements that appear to have been selected mainly because they were different. The Ballistic Missile Defense Review report called for "space-based sensors [to] detect ballistic missile launches and provide data to ground and sea-based missile defense assets."¹²² The opposite is now being done. A new and promising system, the STSS space-based sensor system that is currently being tested in orbit, has been effectively terminated and replaced by a long-term research and development (R&D) program.

The Obama administration's description of the New START Treaty and its impact on missile defense was misleading. The initial position taken by the Obama administration was that New START "does not contain any constraints on testing, development or deployment of current or planned U.S. missile defense programs or current or planned United States long-range conventional strike capabilities."¹²³ This was simply untrue. Former Deputy Assistant Secretary of Defense Keith Payne incisively noted:

The administration claims, as Under Secretary of State Ellen Tauscher stated emphatically on March 29, that "There is no limit or constraint on what the United States can do with its missile defense systems...definitely, positively, and no way, no how..." Yet our Russian negotiating partners describe New START's constraints on missile defenses quite differently.

On March 30, Russian Foreign Minister Sergei Lavrov said in a press conference after the G-8 foreign ministers meeting in Canada that there are obligations regarding missile defense in the treaty text and the accompanying interpretive texts that constitute 'a legally binding package.' He also stated at a press conference in Moscow on March 26 that "The treaty is signed against the backdrop of particular levels of strategic defensive systems. A change of these levels will give each side the right to consider its further participation in the reduction of strategic offensive armaments." Kremlin National Security Council Secretary Sergei Prikhodko told journalists in Moscow on April 2 that "The United States pledged not to remodel launchers of intercontinental ballistic missiles and submarine-based ballistic missiles for firing interceptor missiles and vice versa."¹²⁴

Payne's analysis was correct. Article V, paragraph 3 of New START clearly contains limits on missile defense. The New START Treaty states:

Each Party shall not convert and shall not use ICBM launchers and SLBM launchers for placement of missile defense interceptors therein. Each Party further shall not convert and shall not use launchers of missile defense interceptors for placement of ICBMs and SLBMs therein. This provision shall not apply to ICBM launchers that were converted prior to signature of this Treaty for placement of missile defense interceptors therein.¹²⁵

The impact of Article V on future defense programs may be considerable. In an era of enormous pressure on defense spending, a dual-role missile—a missile that can perform both missile defense and conventional surface-to-surface roles—makes a great deal of sense. Yet the United States agreed to prohibit dual-role missiles in New START, apparently just to please Russia. In addition to this, as the Heritage Foundation New START report pointed out:

This provision [Article V quoted above] is linked to a definition of missile defense launcher and missile defense interceptor missiles that appears in the Protocol. These definitions appear to risk bringing the systems the United States plans to deploy in Europe under the authority of the Bilateral Consultative Commission (BCC)....

After months of forcefully denying that New START contains any limitations on missile defense, the Obama Administration now acknowledges its limitations on missile defense, but says that those limits are not burdensome because it does not plan to use ICBM or SLBM launchers for defensive interceptors; so the prohibition on such conversion is not a meaningful limit. This point obviously changes the question from whether New START contains limits on missile defense to whether this Administration finds the limits New START does contain to be burdensome. This revision of the Administration's claims regarding the new Treaty dismisses the possibility that a future administration could find that these limits on ballistic missile defense preclude important defensive options. New START prohibits some missile defense options but secures no corresponding limits on the types of offensive missile threats from Iran and North Korea that U.S. missile defenses are intended to address. The extent to which these ballistic missile defense limits in New START will create serious problems for U.S. and allied security in the future cannot now be known with precision.

There is no legitimate issue vis-à-vis missile defense distinguishability. There is not the slightest similarity between U.S. ICBMs and SLBMs and missile defense interceptors other than that they are all rockets. This provision represents a surrender to the Russian agenda to develop legal constraints on missile defense. Fortunately, the New START Resolution of Ratification states the sense of the Senate that further limitation of missile defenses are not in the U.S. national security interest. The Senate in the resolution ratification prohibited expansion of the Article V prohibitions without a Treaty amendment. However, this may not stop the Obama administration from trying to expand these limits through political commitments.

The concessions granted by the Obama administration on missile defense have resulted in a hardening of the Russian position on these issues. Russia is now pressing for a legally binding agreement on missile defense. They are asking for a veto on deployment issues, according to Russia's Chief of the General Staff General Nikolai Makarov, who stated, "The main condition for joint work [in the area of missile defense] should be the permanent participation of Russian

experts in drafting the European missile defense architecture.”¹²⁶ Furthermore, Russia demands, according to Foreign Minister Sergei Ivanov, “...‘red-button’ rights to launch strikes at incoming weapons.”¹²⁷ However, then-Russian Ambassador to NATO Dmitry Rogozin said Russia will not subject its aerospace defense to anyone else’s control—classic Russian hypocrisy.

Russia is now attempting to use the threat of withdrawal from the New START Treaty as a means of limiting U.S. missile defense. In May 2011, Russian Deputy Foreign Minister Sergei Ryabkov said Moscow was concerned by the United States’ refusal to provide legally binding guarantees that its European missile defense system will not be directed against Russia, and said the New START Treaty may become hostage to the U.S. approach. The Russians are already beginning to make military threats against the PAA. On May 18, 2011, then-President Dmitry Medvedev threatened that if Russia does not get its way on missile defense, it might suspend or even terminate the New START Treaty. In October 2011, Foreign Minister Sergei Lavrov stated that “the General Staff will be required to take measures of military-technical nature, if modern hardware—radars, interceptors—emerge around our borders.”¹²⁸ In November 2011, he repeated this message: “if our partners continue to ignore our position, we will have to ensure national security interests with other methods. Practical military-technical measures may be taken in response.”¹²⁹ One should expect Moscow’s threats to escalate further and to include nuclear attack threats with Putin’s return to the Presidency.

What It All Means

The substantive content of the New START Treaty represents a bad combination of permissive provisions that only the Russians are likely to exploit and one-sided restrictions that only impact the United States. Tactical nuclear weapons are not limited but conventional weapons are. It will be more difficult to deploy conventional global strike capabilities than it would be without the treaty. The loopholes in New START are so large that the supposed nuclear reductions are illusory and there really is no limitation on what the Russians can actually develop and deploy, other than the limitations imposed by the state of technological development and the state of the Russian economy. The ink is barely dry on the New START Treaty and missile defense is already being held hostage to unreasonable Russian demands. Many opponents of New START foresaw this eventuality. Despite the claims of the Obama administration, it will be extremely difficult to reverse many of these outcomes in a post-New START agreement.

Commenting on the New START Treaty, Major General (ret.) Vladimir Dvorkin stated that by signing it, Russia and the United States demonstrated that they do not want to “seriously” cut their nuclear arsenals.¹³⁰ He is partly correct. The Obama administration certainly wanted to cut nuclear arsenals but employed a flawed approach to negotiating with the Russians. Enormous American leverage was thrown away in exchange for virtually nothing. To call this a step on the road to nuclear zero is misleading. Worse still, U.S. missile defense systems are under intensified attack at a time when the United States and its allies face a growing missile threat from rogue states.

The next chapter will discuss another fundamental characteristic of an arms control treaty for which New START deserves a failing grade—verification of provisions in the Treaty.

Chapter II

Verification: The Great Retreat

Prohibitions and limitations in an arms control treaty establish agreed constraints on weapon numbers and capabilities. Verification measures complement those constraints by providing confidence that other parties are adhering to the agreement and that attempts at cheating will be discovered in a timely manner. The previous chapter discussed the lack of well-defined constraints on nuclear forces in New START. This chapter discusses the New START verification regime and provides numerous examples of verification measures from the previous START Treaty which have been eliminated or weakened in New START. These weakened verification measures provide numerous opportunities for deception and cheating while seemingly being in compliance with New START.

For each strategic arms control treaty negotiated by the United States prior to the New START Treaty, the Senate Select Committee on Intelligence provided the Senate with both classified and unclassified reports on the verification provisions of the treaty. In each case, these assessments of treaty monitoring and verification capabilities were consensus reports. However, when New START was presented to the Senate, for the first time in decades, the Senate Select Committee on Intelligence provided neither a classified nor unclassified report on the Treaty's verification regime. Separate, classified letters on the Treaty to the Chairman and Ranking Member of the Senate Foreign Relations Committee replaced the report. This departure from past procedure reflects strong disagreements within the Senate over the verification measures in the Treaty and the degree of confidence needed to verify Russian compliance with New START.

During the New START ratification hearings, Secretary of State Hillary Clinton stated that the Treaty provided stability, transparency, and predictability. Yet with the exception of the 1972 SALT I Interim Agreement, the past treaties that were approved by the Senate with little or no opposition forced reductions on the part of the Soviet Union and Russia and had vastly more rigorous verification regimes than New START.

The weak verification measures in New START drew criticism. The Heritage Foundation's analysis of the New START Treaty's verification regime characterized the Treaty as "Potemkin Village Verification." Former Under Secretary of State John Bolton called New START a "Treaty for Utopia," and noted that, "we have lost important START requirements for on-site inspections, telemetry exchanges, and production monitoring."¹³¹ Then-Senator Christopher Bond (R-MO), the vice chairman of the Senate Select Committee on Intelligence, told the Senate, "There is no doubt in my mind that the United States cannot reliably verify the treaty's 1,550 limit on deployed warheads."¹³² Former Clinton administration Director of Central Intelligence R. James Woolsey stated, "Most importantly, New Start's verification provisions will provide little or no help in detecting illegal activity at locations the Russians fail to declare, are off-limits to U.S. inspectors, or are underground or otherwise hidden from our satellites."¹³³

Unfortunately, the criticism of New START Treaty's verification regime is warranted. The Heritage Foundation produced the most accurate detailed assessment of New START verification. The report begins by pointing out:

The New START Treaty's verification regime is not even a pale reflection of the verification regime for the original START Treaty. The decline of verification standards is striking when one remembers the late 1990s, when U.S. President William Clinton and Russian President Boris Yeltsin were discussing a START III agreement, limiting strategic nuclear forces to 2,000–2,500 warheads. For this decrease in strategic nuclear forces, increasingly stringent verification measures were considered mandatory. While it is not known what the Obama Administration proposed for New START, they certainly did not come away from the negotiating table with a treaty and a verification regime appropriate for low levels of nuclear forces.¹³⁴

In 1997 President Bill Clinton and President Boris Yeltsin signed a joint statement which recorded an "understanding" that the U.S. and Russia would be, "Resolving issues related to the goal of making the current START treaties unlimited in duration" and adopting, "Measures relating to the transparency of strategic nuclear warhead inventories and the destruction of strategic nuclear warheads...."¹³⁵ According to Assistant Secretary of State Rose Gottemoeller, "It is worth noting that in the late 1990's when I was working in the Clinton Administration, we advanced a proposal for a warhead protocol [for stored nuclear warheads] at that time and it does require very intensive verification measures."¹³⁶

When New START is compared with the START Treaty we see a combination of reduced inspection numbers, reduced notifications, and the elimination of important verification provisions and the substitution of what then-Senator Bond characterized as "gimmicks." This is striking in light of the fact that the original START Treaty verification regime itself was not designed to be adequate for the stated Obama administration objective of moving toward zero nuclear weapons. Nearly every verification measure in New START is more permissive and less rigorous than its comparable verification measure in the original START Treaty. As Russian Chief of the General Staff General Nikolai Makarov observed, "The previous treaty stipulated no less than 28 inspections per year. There will be 18 annual inspections now, in units on and off combat alert."¹³⁷ Russian Major General (ret.) Vladimir Dvorkin, who in contrast to most Russian military leaders actually supports real arms control, accurately reported that the number of notifications was reduced from 152 under START to 42 under New START.¹³⁸ This chapter discusses the lack of effective verification measures in New START that would enable the United States to have confidence that Russia is complying with the intent and specific limits of New START and to provide an understanding of developments in Russian nuclear weapon capabilities, including early indications of possible cheating.

Counting Deployed ICBM and SLBM Warheads

Counting deployed ICBM and SLBM warheads is clearly the central problem of the New START verification regime. The report of the Senate Select Committee on Intelligence on the original START Treaty said that, "U.S. intelligence will have less than high confidence in its monitoring...the number of RVs actually carried by some ICBMs and SLBMs..."¹³⁹ In a response to a question for the record during New START ratification process regarding "the most common violations by Russia with regards to the verification and inspection provisions under the START Treaty," the Obama administration submitted the following reply: "The most

common Russian violations encountered during START involved problems regarding reentry vehicle onsite inspections (RVOSI) and with regard to the exchange of telemetric information.”¹⁴⁰

In light of the much higher stakes in the New START Treaty because of the administration’s goal of lower numbers of warheads and the record of Russian noncompliance with START verification provisions related to warhead inspections, exchange of telemetry, and mobile ICBMs, a prudent approach would have been to insist on more stringent verification provisions in New START compared to START. However, the Obama administration pursued the opposite approach—less stringent verification provisions.

Then-Senator Bond’s conclusion that the number of deployed warheads cannot be verified is quite valid. This is significant because missiles are much more expensive than warheads, and therefore, the cheapest way of cheating is to place more than the declared number of warheads on existing or new ballistic missiles. Three types of capability would enable Russia to cheat successfully on the allowed number of deployed warheads: 1) sufficient missile power or throw-weight to carry extra warheads; 2) designing and testing missiles to release more than the number of warheads that are declared to be mounted on the missile; and 3) warhead covers of sufficient size to cover more than the declared number of warheads on the missile being inspected. The first two are actually perfectly legal under the New START Treaty. The third would be a treaty violation but represents actual Russian practice under the START Treaty.¹⁴¹ Thus, the entire cheating scenario is composed of actions that are either legal under New START or behavior that the Russians exhibited under START without any penalty.

Under the original START Treaty, inspections were supplemented by the combination of restrictive treaty provisions that could be monitored by National Technical Means (NTM) of verification or telemetry data exchange. National technical means of verification constitute a wide variety of technical collections capabilities, such as photography, radars, and telemetry collectors. Telemetry data exchange, which began with the START Treaty, required the testing party to provide telemetry tapes to the other party. Telemetry was used to determine some technical characteristics of ballistic missiles.

Fundamental changes were made in the basic concept of limitation between START and New START—the elimination of the attribution of a specific number of warheads per ICBM and SLBM, and the START prohibition on mounting a number of warheads higher than that attributed to the specific missile (i.e., if a missile is attributed with three warheads, mounting four or more warheads would be a violation of the START Treaty and it could not be tested with more than three warheads). National technical means under New START cannot play the same role in verification that it did in START since any number of warheads can legally be mounted on any missile. Under New START, as then-Senator Bond noted:

As an initial hurdle, the ten annual warhead inspections allowed under the treaty permit us to sample only 2 to 3 percent of the total Russian force. Further, under New START, unlike its predecessor, any given missile can have any number of warheads loaded on it. So even if the Russians fully cooperated in every inspection, these inspections cannot provide conclusive evidence of whether the Russians are complying with the warhead limit.

Let's take an example: say that the United States found a missile that was loaded with more warheads than the Russians declared. While this would be a faulty and suspicious declaration by Russia, we could not necessarily infer from it that they had violated the 1,550 warhead limit—especially because the Russians could always make some excuse for a faulty declaration.¹⁴²

In the START Treaty's verification regime, NTM was used effectively to monitor the numerous restrictions in the Treaty that were aimed at limiting the potential for cheating. This is a problem that has long existed in arms control. New START completely depends on inspections that, as Senator Bond noted, are inadequate and were violated by Russia under the START Treaty.

Under both START and New START, on-site inspections involve the visual counting of warheads present on the missile. However, the inspectors do not get to see the actual warheads but rather see covers which are placed over the warheads. Unless the warhead covers are conformal (draped over the warheads and conform to the shape of each warhead, which is frequently not the case, as will be discussed below), the covers can prevent any visual confirmation of the size of the warheads and how many warheads are under the cover. Thus, if the cover has a fixed shape and is oversized in relationship to the size of the warhead under the cover, it may conceal two or more warheads. If so, at a minimum there could be twice the number of warheads on the missile than the number declared for the missile that is being inspected. Cheating by a factor of two would be significant in light of the lower deployed warhead limit in New START.

The so-called "Type One" inspections in New START count, among other things, deployed warheads. They are very unlikely to provide effective verification because the Russians may well continue to use oversized warhead covers as they have done in the past. As noted in the 2005 State Department report on arms control compliance, START allowed, "...the inspected Party to cover RVs [Reentry Vehicles]....Under the Treaty, such covers must not hamper inspectors in ascertaining that the front section contains no more RVs than the number of warheads attributed to a missile of that type. Russian RV covers, in some instances, are too large; consequently, they fail to meet this requirement."¹⁴³ Former Bush administration Assistant Secretary of State for Verification, Compliance, and Implementation, Paula DeSutter, summed up the New START outcome as follows:

The verification measures in the New START treaty add nothing to what was there before in the original START treaty. They are using the original START Reentry Vehicle On-Site Inspection regime, complete with all of the same shrouds and covers that were used during the original START, some of which we found to violate the Treaty because we couldn't confirm the number of Reentry Vehicles (RVs). And those are all still permitted.¹⁴⁴

Actually, they are not "still" allowed because they were legally prohibited by START. However, Russia used such warhead covers and no penalty resulted. The Obama administration should have made an effort to limit cover size to preclude the most likely Russian cheating. In its mad rush to reach an agreement by December 2009 this did not happen. In START, the limitation on covers requires that they shall not hamper inspectors in ascertaining that the front section contains no more reentry vehicles than the number of warheads attributed to that type of missile. According to New START, "the covers shall not hamper inspectors in ascertaining that the front section contains the number of reentry vehicles equal to the number of reentry vehicles

declared for the deployed ICBM or deployed SLBM.”¹⁴⁵ Thus, the START and New START regimes are essentially the same in terms of the legal requirement. The failure to confront and resolve the issue of oversized Russian warhead covers during New START negotiations has legitimized their continued use.

The elimination of all restrictions in New START on the power of ICBMs and SLBMs and on the number of warheads actually released from missiles during testing makes cheating on the number of warheads on deployed ICBMs or SLBMs much easier. To make a judgment under New START with regard to whether Russian warhead covers are too large will require an understanding of how big Russian warheads actually are. However, U.S. understanding of Russian missiles and the characteristics of warheads they carry will likely decline due to the loss of the requirement to exchange telemetry information from missile flight tests and the data denial measures that are now permitted in New START. The issues of telemetry exchange and permitted measures to deny data are discussed later in this chapter.

This is not a theoretical concern. Russian missiles are routinely reported in the Russian press as being able to carry many more warheads than they were declared to have been capable of carrying under the START Treaty. Russian arms control expert Viktor Myasnikov reports that Russia possesses a warhead of 100 kilotons (kt) which weighs 100 kilograms (kg).¹⁴⁶ The Bulava 30 SLBM was declared under START to be a six-warhead missile despite the fact that it is routinely reported in the Russian press as capable of carrying 10 warheads. According to one Russian press report, the intent is to integrate 10 “super-lightweight” warheads on Bulava-30.¹⁴⁷ Yuriy Solomonov, the chief designer of Russian solid-fuel ICBMs and SLBMs, has stated that the Russians will be introducing new warheads during the New START Treaty’s duration (in 2016).¹⁴⁸ (Moreover, during 2011, the Russian press reported that Russia was going to mount warheads of different sizes on two of its missiles and even mix warheads of different sizes on a single missile. In July 2011, *Izvestia* and *Interfax* reported that the new Russian heavy ICBM will deliver up to 15 medium or 10 heavy nuclear warheads at a range of over 10,000 km. On the newly tested Russian Liner SLBM, a modification of the Sineva SLBM, the Russian press reports that “the Liner can carry up to four medium-yield warheads or up to 12 small-yield warheads, or *their mixture*” (emphasis added).¹⁴⁹ This has the potential to make the problem of warhead counting worse if Russia continues to use the type of covers that were used under START and which are allowed under New START.

Without telemetry from Russian missile test flights the United States may not be able to detect the development of small reentry vehicles of the type reported in the Russian press, especially if the Russians test in a manner that minimizes U.S. NTM collection capability. Moreover, even if the United States detects Russian missile flight tests with a large number of warheads released, this is perfectly legal under New START. Large warhead covers and new, smaller warheads deployed on Russian missiles could make it difficult for U.S. inspectors to have confidence in the number of warheads beneath the covers of an inspected Russian missile.

Extra Objects Declared Not to Be Warheads

The utility of New START’s warhead counting inspections is also impacted by the potential problem of extra objects that are observed on the missile but that are not declared to be warheads. The extra objects may be penetration aids, ballast on a missile from which some warheads have been removed, or they may be undeclared actual warheads. If they are warheads, they could be nuclear, biological, chemical or conventional (in declining order of

lethality). START mandated that the inspected party prove to the inspecting party that the extra objects were not reentry vehicles (warheads). No specific way of doing this was mandated by START and this was a problem. New START eliminates this obligation for the inspected party. It only provides that, "The Parties shall have the right to confirm that such nonnuclear objects are not nuclear-armed reentry vehicles..."¹⁵⁰ Thus, resolution of the old START problem was not addressed in New START.

New START warhead verification procedures involve the use of neutron detectors to determine that any extra objects are not nuclear. The problem is that neutron detectors are inadequate to detect nuclear weapons composed of highly enriched uranium (HEU). It is widely known that HEU is harder to detect than plutonium "due to the low levels of radiation that are emitted."¹⁵¹ HEU produces very few neutrons and weakly penetrating gamma rays as a result of radioactive decay.

In light of unlimited Russian missile throw-weight allowed under New START, the effectiveness of the allowed radiation detection equipment may be central to the effectiveness of the regime. With neutron detectors, nuclear warheads which use only HEU are very likely to register as non-nuclear.

Under START procedures, a party could use its own neutron detector equipment during an on-site inspection. New START contains the surprising provision that, "For these purposes, the inspected Party shall have the right to use radiation detection equipment provided by the inspected Party, if agreed by the Parties within the framework of the BCC [Bilateral Consultative Commission], or radiation detection equipment provided by the inspecting Party."¹⁵² This has the potential of making the equipment useless. For example, if the Russians are allowed to provide the radiation detection equipment to be used to inspect their missiles, U.S. inspectors will not have detailed knowledge of the technical characteristics of the equipment or of its proper calibration.

No Verification Regime for Biological or Chemical Warheads

The side effect of the deletion in New START of the START requirement to confirm that extra objects mounted on missiles are not reentry vehicles eliminates any verification for biological and chemical weapons. Very tiny amounts of chemical or biological agent can be deadly, making these weapons very lethal. Under both START and New START, all types of reentry vehicles count, including chemical and biological warheads, although their presence would violate Russian obligations under the international conventions that deal with the elimination of chemical and biological weapons. The Senate Select Committee on Intelligence focused on the threat posed by biological weapons in its report on START Treaty verification. It states:

This Committee remains deeply concerned, moreover, that Russia's former—and perhaps continuing—biological weapons program may indicate that the CIS/Russian military is capable of mounting or continuing a START violation, either in contravention of the wishes of Russia's civilian authorities or with the knowledge or support of at least part of that leadership.¹⁵³

The Bush administration's 2005 State Department arms control compliance report, like all previous compliance reports which to varying degrees raised concerns about Russian compliance with the Biological Weapons Convention (BWC),¹⁵⁴ concluded that, "The United

States judges based on all available evidence that Russia continues to maintain an offensive BW program in violation of the Convention.”¹⁵⁵ The 2010 Obama administration’s compliance report watered down this conclusion regarding Russia and the BWC.

The combination of unlimited ballistic missile throw-weight, the right to test an unlimited number of reentry vehicles on ballistic missiles, the new Russian heavy ICBM currently in development, the history of oversized warhead covers, and the dependence on neutron detection gear that will not detect nuclear warheads based on highly enriched uranium (and declared to be non-nuclear objects), creates the opportunity for large-scale cheating and has serious national security implications for the United States.

Denying Inspectors Access to Mobile MIRVed ICBMs

Another way to successfully cheat with regard to warhead numbers is to deny the inspectors access to mobile ICBMs, thus preventing the inspection of those missiles. New START makes this easier than under START. The effectiveness of the New START inspections themselves has been compromised. The effectiveness of short-notice inspections has been degraded by providing more time to hide things or remove them from the site to be inspected. In START, the inspected party had nine hours after the declaration of an inspection to prepare the site for inspection. Under New START, the time limit is lengthened to 24 hours.¹⁵⁶ This is a major difference that degrades verification because it will normally allow denial activity to take place during a period of darkness. Particularly significant is the fact that mobile ICBMs can be moved out of inspectable areas before the inspectors arrive. This would be a treaty violation but would be difficult to detect. Notably, a covert force of mobile ICBMs outside of inspectable areas will never be subject to any type of inspection.

The New START Treaty makes denial of inspections easier by eliminating the START Treaty requirement that mobile ICBMs be based in “restricted areas.” Restricted areas were missile bases that were limited in size and in the number of launcher-related facilities present which could house mobile ICBMs. It was an important part of the overall START regime to make cheating with mobile ICBMs more costly and difficult. The New START Treaty also dispenses with some inspection rights. The 2005 State Department compliance report stated that, “Russia’s practice of locating deployed SS-25 road-mobile launchers outside their declared RAs [Restricted Areas] for long periods of time constituted basing in a manner that violated the provisions of paragraphs 1 and 9 of Article VI of the Treaty.”¹⁵⁷ While Russia violated the START Treaty by this practice, it agreed to allow inspections, including reentry vehicle inspections, at the facility where the missiles and launchers were illegally deployed. From the standpoint of verification, the importance of this issue is that it demonstrated Russia’s ability to operate mobile ICBMs from facilities very unlike their normal bases. This has great implications with regard to the feasibility of a covert mobile ICBM force under New START’s degraded verification regime.

The New START Treaty states, “Mobile launchers of ICBMs located at a maintenance facility may *not* be designated for inspection to confirm the declared number of reentry vehicles emplaced on deployed ICBMs contained on such mobile launchers of ICBMs” (emphasis added).¹⁵⁸ This creates a loophole that has the potential to undermine the New START verification regime for deployed warheads on mobile ICBMs. Russia now has the option to legally move mobile ICBMs to a “maintenance facility” which is not inspectable. Moreover, they

can completely avoid warhead inspections by simply declaring some missile bases to be “maintenance facilities.”

The Demise of the START Telemetry Regime

The virtual elimination of the START telemetry regime was one of the biggest victories for Putin’s autocracy in the New START negotiation. Ruslan Pukhov, director of the Center for Analysis of Strategies and Technologies in Moscow, accurately described the impact of this as being, “... extremely advantageous for Russia, which is developing and beginning the deployment of a number of new ballistic missiles (Yars, Bulava, and in the future also a new liquid-propellant ICBM). Telemetry from their test launches unquestionably would be of great interest to the Americans...”¹⁵⁹

Telemetry is the diagnostic measurements that are broadcast from ballistic missiles during flight testing. Access to unencrypted telemetry from ballistic missile test flights was one of the key achievements of the START Treaty.

The handling of telemetry in the START Treaty was dominated by two factors: 1) the loss of the Iranian monitoring sites, according to then-Senator Jake Garn; and 2) Russian violations of the SALT II Treaty by encryption that impeded verification. After the signature of SALT II, the Soviets began high-level encryption of telemetry which the Reagan administration determined impeded verification of SALT II.¹⁶⁰ Reversing these practices became one of the key U.S. objectives in the START Treaty verification negotiation. The Reagan and Bush administrations’ efforts to resolve these problems were successful. The Heritage Foundation New START verification report has accurately summed up the START provisions telemetry and compared them to those in New START:

The START I Treaty required the broadcast of telemetry from every flight test and provision of telemetry tapes and interpretive data from every flight test. In contrast, New START requires telemetry from at most five flight tests per year. Agreement on the precise number of telemetry exchanges and for which flight tests telemetry will be provided will occur in the Bilateral Consultative Commission (BCC). Moscow will be free to determine which of its flight tests it will select to meet this goal. The Russians are likely to provide telemetry data on flight tests of Russia’s aging missiles rather than from its development tests of new ICBMs and SLBMs (submarine-launched ballistic missiles).

The START I Treaty contained very strong restrictions on the encryption of telemetry. These have been eliminated for New START. Thus, it is clearly legal to encrypt all telemetry for every flight test for which a party does not intend to provide telemetry tapes. This is very likely to be the case for all flight tests for new development or modern Russian ICBMs and SLBMs. Our understanding of the new and modified Russian missiles is therefore likely to decline dramatically over time. This will have profound implications.¹⁶¹

The Department of State announced in February 2012, “the Parties would exchange, in 2012, telemetric information on one launch of an ICBM or SLBM conducted by each Party during the period from February 5, 2011, to December 31, 2011.”¹⁶²

The virtual elimination of the START telemetry regime is one of the most serious blows to the verifiability of the New START Treaty. Former Director of Central Intelligence R. James Woolsey recognized the fact that New START made it “free to encrypt telemetry,” and that this was one of the key verification problems in the Treaty.¹⁶³ Former Assistant Secretary of State Paula DeSutter outlined the need for telemetry to verify New START. She stated:

These are fundamental misunderstandings of what we use telemetry for! You want to know the throw-weight so you can figure out how many RVs a missile can carry and how many RVs it is being tested to carry. You want to know how many RVs they are putting on the next generation of missiles, and how many on the SS-27. You need to know that. So, since they say they are monitoring the actual number of deployed RVs, they ought to want to know carriage capacity. Since the testing party decides which flights it will broadcast, you can’t expect to get telemetry and interpretive data for any flight tests of new systems.¹⁶⁴

Even worse, buried deep inside the New START Protocol Annex is the following provision: “For each launch of an ICBM or SLBM that the Party conducting such launches does not intend to consider for provision of telemetric information to the other Party, the Party conducting such launches may use any method of denying access to telemetric information that originates on board the missile and is broadcast.”¹⁶⁵ This is not a verification or transparency provision but a data denial provision and it is unprecedented.

The Russian Resolution of Ratification exacerbates the telemetry problem. It prohibits “providing to the United States of America telemetric information about launches of new types of intercontinental ballistic missiles and submarine-launched ballistic missiles of the Russian Federation...”¹⁶⁶ This is both a condition of ratification and a law in Russia. Thus, the United States will never get any Russian-provided telemetry tapes from the new Russian heavy ICBM, the largest cheating threat, and the Treaty authorizes Russia to use, “any method of denying access to telemetric information” from launches of this missile.

Russia is very unlikely to ever provide the United States telemetry from flight tests of the MIRVed SS-27 (RS-24) and the Bulava. The agreement to limit telemetry exchanges to one launch per year is likely to be continued.

The Elimination of the START Verification Regime for Mobile ICBMs

Because of the serious verification problems associated with mobile ICBMs for many years during the START negotiations, the Reagan administration called for a ban on such missiles. Late in the administration it shifted to the position that they would be, “Banned unless verification problems can be resolved.”¹⁶⁷ In 1988, Ambassador Ronald Lehman, then-assistant secretary of defense for international security affairs, wrote in *Strategic Review*, “Mobile ICBM launchers are inherently difficult to monitor. Moreover, since mobile launchers can rapidly be reloaded with additional missiles, verification gaps could have serious strategic implications.”¹⁶⁸

Because of the problems involved with the verification, the START Treaty placed many constraints on mobile ICBMs. In order to enhance verification, an entire article of START was devoted to putting restraints on the way mobile ICBMs can be deployed. START Article VI contained constraints upon operating mobile ICBMs, including: 1) deployed road-mobile launchers of ICBMs and their associated missiles had to be based only in small “restricted

areas”; 2) the number of fixed structures for housing road-mobile launchers of ICBMs within each “restricted area” was limited; and 3) deployment of missiles was limited to “deployment areas” which could not exceed 125,000 square kilometers in size.

START Article VI was not intended to provide a verification regime, but rather placed constraints upon mobile ICBMs designed to make inspection and verifications provisions more effective. For example, the limitation on the number of missiles based in a single Restricted Area was designed to prevent the covert deployment of more than a single regiment of mobile ICBMs in a single Restricted Area. Covert deployment of this sort could be part of a relatively cheap cheating scenario. Deployment areas were designed be large enough to allow survivability while also small enough to make it easier to find covert deployments. The discovery of even a single mobile launcher outside of a deployment area, except for relocation of launchers after required notification, would be a treaty violation. The elimination of Article VI’s restriction on how mobile ICBMs can be deployed, combined with the elimination of the START mandates on minimum distances between the locations of many types of facilities associated with mobile ICBMs, make it easier and cheaper to cheat.

The START Treaty numerically limited mobile ICBMs and provided for continuous monitoring activities at production facilities for mobile ICBMs. This was called Perimeter Portal Continuous Monitoring (PPCM). It was the central provision of the START mobile ICBM verification regime and is probably more important than the rest of the regime combined. It is completely absent from New START.

PPCM, which does not appear in New START, came into being during the INF Treaty negotiation in the 1980s and carried over into START in response to the inadequacy of NTM for counting mobile ICBMs. The unanimous report of the Senate Select Committee on Intelligence on the INF Treaty noted, “the Intelligence Community has not resolved significant differences of view of the possibility that the Soviets may not have disclosed their entire inventory of non-deployed SS-20 missiles.” It further noted that some intelligence community estimates concerning the number of Soviet SS-20s were 300-600 missiles higher than the 608 missiles the Soviets declared.¹⁶⁹

The START Treaty also provided for cooperative measures in which roofs of fixed structures that housed the mobile ICBMs were opened so that satellites could see what was inside. These provisions also were omitted from New START. Nowhere to be seen in New START is the START restriction that limited an ICBM base to one type of mobile ICBM. This further reduces the effectiveness of the New START verification regime.

In its 1992 report on START verification, the Senate Select Committee on Intelligence concluded that the START Treaty had constraints and a dedicated verification regime for mobile ICBMs because they are very difficult to count by NTM. Even with the entire START mobile ICBM regime, the Senate Select Committee Intelligence report on START verification stated that, “...U.S. intelligence will have less than high confidence in its monitoring of such areas as non-deployed mobile ICBMs...”¹⁷⁰ Remember that this assessment is based on the extensive START mobile ICBM regime, including production monitoring, which virtually does not exist in New START. The only thing that was retained from START was the provision requiring unique identifiers, which can be easily changed. Moreover, if the missiles and launchers are housed outside of inspectable areas, there is no way to use New START inspections to detect and count them.¹⁷¹ The elimination in New START of the critical START constraints on mobile

ICBMs is made worse by the abolition of many other substantive limitations on mobile ICBMs.¹⁷² Most of the mobile ICBMs during the START period were single-warhead SS-25s. Under New START, most, or eventually even nearly all, of the mobile ICBMs will be MIRVed SS-27s (RS-24s).¹⁷³ This dramatically increases the risks associated with Russian cheating.

The Obama administration reportedly failed in its effort to retain the START mobile ICBM monitoring regime in New START. Pavel Podvig, a Russian analyst who specializes in Russian strategic forces and arms control, wrote that:

To address Russia's concerns, the United States offered, among other things, perimeter monitoring of its two warhead storage facilities...likely the Strategic Weapons Facility Atlantic at Kings Bay and Strategic Weapons Facility Pacific in Bangor.... In exchange, however, the U.S. insisted on continuing access to the Votkinsk plant... arguing that as much as Russia is concerned about the upload potential of the U.S. submarines, the United States is concerned about Russian mobile missiles. Votkinsk, however, was where Russia drew red line—for some reason this was made into a very hot political issue back in Russia.¹⁷⁴

When asked to explain the absence of mobile ICBM production monitoring in New START, Under Secretary of State Ellen Tauscher said mobile ICBMs would be verified through “data exchanges, exhibitions, and inspections...and national technical means....”¹⁷⁵ If these measures were effective, provisions like PPCM would never have gotten into the INF and START Treaties. As the Heritage Foundation New START verification report concluded:

Data exchanges do not *verify* anything. They only provide data that must be verified. No cheater would be expected to provide accurate notifications of activity that was to be hidden. Exhibitions are not related to monitoring the number of mobile ICBMs, but rather confirming the accuracy of declared dimensional data for mobile ICBMs and their launchers. Inspections merely provide a snapshot in time of the number of mobile launchers located at mobile ICBM bases. Verification of numbers of mobile ICBMs requires active measures to lessen the likelihood of covert bases. The elimination of declared mobile ICBM deployment areas makes finding covert bases much more difficult for national technical means. With New START, mobile ICBMs could be located almost anywhere in Russia.

Due to PPCM, the START regime for monitoring mobile ICBM production allowed an exact count of the number of mobile ICBMs that were produced after the Treaty's entry into force. This was because, as former Director of Central Intelligence R. James Woolsey has observed, “Satellites alone can't tell what's in a railcar exiting a factory.”¹⁷⁶ The impact of the deletion of mobile ICBM production monitoring in New START is made more severe by the elimination of other START provisions. Also gone are the aforementioned START requirement for opening the roofs of mobile ICBM shelters to enhance the capability of NTM to monitor mobile missiles at ICBM bases, the restriction on the size of ICBM bases, the restriction on the size of deployment areas for road-mobile ICBMs, and restrictions that limit an ICBM base to one type of mobile ICBM.¹⁷⁷ The START provision that granted a right to “conduct suspect-site inspections to confirm that covert assembly of ICBMs for mobile launchers of ICBMs or covert assembly of first stages of such ICBMs is not occurring” does not appear in New START. Thus, New START inspections are limited to only narrowly defined basing areas, which are hardly where a

covert force is likely to be located. Since mobile ICBMs are by definition “mobile,” they can easily be moved out of inspectable areas before inspectors can arrive.

Russian creation of at least a small covert force of MIRVed mobile ICBMs under New START is certainly possible and perhaps even likely. If nothing else, it would assure Russian world dominance under a nuclear zero regime. There is a history of Russian covert mobile missile forces. With the elimination of nearly all restrictions on mobile ICBM deployment, NTM is not adequate to reach a definitive conclusion on the likely indication of a covert Russian program.¹⁷⁸ Moreover, there were a number of relevant violations of the START verification regime. According to the 2005 State Department compliance report:

- Russia prevented U.S. inspectors from exercising their Treaty right to measure launch canisters for SS-24 ICBMs contained in rail-mobile launchers that are located within the boundaries of an inspection site...
- ...Russia's practice of locating deployed SS-25 road-mobile launchers outside their declared RAs [Restricted Areas] for long periods of time constituted basing in a manner that violated the provisions of paragraphs 1 and 9 of Article VI of the Treaty.
- ...Russia continues to violate START provisions relevant to [the] obligations [for road mobile launcher accountability].¹⁷⁹

All of these activities, if they were to happen under New START, would impact verification in a negative manner. Basing mobile ICBMs outside of Restricted Areas gave Russia practical experience in operating mobile ICBMs in a basing mode that is much harder to detect by NTM. Denying measurement of launch canisters of mobile ICBMs located on launchers can make it more difficult to identify missile types.

A Demonstrated Capability to Covertly Deploy ICBMs

Much of the original START Treaty's mobile ICBM deployment and verification regime was the product of actual Soviet cheating under SALT II. SALT II prohibited the deployment of the SS-16 mobile ICBM. In his first noncompliance report to the Congress, President Ronald Reagan concluded that, “While the evidence is somewhat ambiguous and we cannot reach a definitive conclusion, the available evidence indicates that Soviet activities at Plesetsk are a probable violation of their legal obligation not to defeat the object and purpose of SALT II prior to 1981 during the period when the Treaty was pending ratification, and a probable violation of a political commitment subsequent to 1981.”¹⁸⁰ This author participated in the interagency process that led to the decision and believed at the time that the judgment was understated. Apparently, that turned out to be correct.

Some 15-20 years later, the Russian military seems to have forgotten about the SALT II prohibition because they began referring to the SS-16 (the Russians call the missile the “Temp-2S”¹⁸¹) as having been a deployed missile. In 1999, *Krasnaya Zvezda*, the official defense ministry newspaper, reported that two missile regiments armed with the Temp-2S went on alert duty near Plesetsk in late February 1976 and that not even all missile troops knew about it.¹⁸² In 2005, Colonel-General Nikolay Solovtsov, then-commander of the Strategic Missile Forces, stated in an interview in *Krasnaya Zvezda* that the missile troops gained experience when

operating the Temp-2S..."¹⁸³ In July 2007, *Krasnaya Zvezda*, reported that the Temp-2S was placed on alert; and that Lt. Gen. Yuriy Yashin was awarded the U.S.S.R. State Prize for its development during the Soviet era.¹⁸⁴ In 2007, Yuriy Solomonov, then the general director of the Moscow Institute of Thermal Technology, the main Russian solid-fuel ICBM manufacturer, wrote in *Krasnaya Zvezda* that the Temp missiles were accepted into the inventory. Reportedly, as many as 200 SS-16s were produced and "as many as 50 missiles could have been deployed in Plesetsk."¹⁸⁵ These are numbers that advocates of nuclear zero might do well to ponder.

The SS-16 was not the only instance of covert Soviet cheating involving mobile missiles. After the demise of the Warsaw Pact, it became apparent just how successful Russia had been in orchestrating a covert mobile missile deployment. The INF Treaty was supposed to have eliminated all Soviet SS-23s, a short-range, nuclear-armed ballistic missile. A special State Department report on the covert SS-23 deployment states that, "In 1990, the United States learned that Soviet-made SS-23 missiles were in East Germany, Czechoslovakia and Bulgaria."¹⁸⁶ The deployment was not detected by the intelligence community. The State Department report continued, "In January, the government of East Germany announced it was closing a missile base and that it would begin to scrap the missiles deployed there. Soon after the announcement, an article in an East German newspaper claimed that the missiles in question were SS-23s. In February 1990, the U.S. identified these missiles as SS-23s. In March, the Soviet Union announced that it transferred SS-23 missiles to East Germany, Czechoslovakia and Bulgaria, before the signing of the INF Treaty. The Soviet Union argued that since these transfers occurred during the Treaty negotiations but before the Treaty was signed, these transferred SS-23 missiles were not subject to the INF Treaty." This means that during the Cold War, when U.S. intelligence really focused on Soviet Union and the Warsaw Pact, it was possible to deploy mobile ballistic missiles covertly. While the SS-23 was smaller than mobile ICBMs, the same tactics could be used today to support a covert mobile ICBM deployment.

The State Department report further added that, "Prior to these revelations, the United States had believed that all SS-23 missiles had been eliminated pursuant to the INF Treaty. In addition, during the negotiations, the Soviet Union had not informed the U.S. of any missile-sharing arrangement, known as a Program of Cooperation, between the Soviet Union and the three European countries. After learning of the existence of several of these weapons in countries belonging to the Warsaw Pact, the United States began an investigation to determine whether these missiles, in addition to providing military advantages to the Soviet Union, constituted a violation of the Treaty."

In 1991, the State Department told the Congress that each of the three Warsaw Pact countries deployed 24 SS-23 missiles, for which the Russians had committed to provide nuclear warheads "in accordance with Soviet military planning."¹⁸⁷ This report also said that the security measures associated with the SS-23 deployments in Eastern Europe "were extensive and went beyond those in place for other forces." Even the NTM provisions provided under the more robust START verification regime failed to detect the Soviets' covert deployment of the SS-23. Thus, some skepticism is warranted with regard to former Under Secretary of State Tauscher's assertion that the degraded NTM measures under New START will succeed.

In the 1991 report, the Bush administration found that the Soviet Union had "negotiated in bad faith" and that it had "probably violated the Elimination Protocol of the [INF] Treaty by failing to

eliminate in accordance with the [INF] Treaty procedures, reentry vehicles associated with and released from programs of cooperation.”

In light of the elimination of missile production monitoring at Votkinsk, the history of the Russian START violations concerning mobile ICBMs has more relevance. The State Department compliance report in 2005 stated that, “Russia has failed to declare certain road-mobile launchers of ICBMs when they first leave their production facility, as required by the Treaty. Russia has moved some of these launchers to an undeclared ‘break-in’ area located over 60 miles from the production facility without declaring that they have left the production facility and are accountable under the Treaty.”¹⁸⁸ This could be a key element of a cheating scenario. The abolition of the mobile ICBM verification regime translates into a legal right for launchers to be anywhere at any time because of the elimination of mobile ICBM deployment areas.

Reducing the Number and Effectiveness of Inspections

New START reduced the types of inspections from 12 to 2. Russia’s Chief of the General Staff General Nikolai Makarov observed that, “The previous treaty stipulated no less than 28 inspections per year. There will be 18 annual inspections now, in units on and off combat alert.”¹⁸⁹ There are two types of inspections that relate to New START. Type 1 inspections involve counting the number of warheads on inspected missiles and bombers and specifically count deployed and non-deployed strategic offensive arms located at inspected bases. Type 2 inspections confirm the accuracy of declared data on the numbers, types, and technical characteristics of non-deployed strategic offensive arms subject to this Treaty; and confirm that strategic offensive arms have been converted or eliminated. Most of the New START inspections were wasted on counting things that are not even limited by the Treaty, such as the number of non-deployed ICBMs and the number of weapons that are actually loaded on bombers. An article in *RIA Novosti* by Ruslan Pukhov points out: “The reduced number of inspections under the new START III [New START] is more of a success for Russia. The United States always was more interested in such inspections....The reduced number of Type One inspections will significantly reduce the Americans’ quantitative opportunities for inspecting Russian mobile ICBM’s [sic]—it was these inspections of mobile ICBM’s [sic] that generated the Russian side’s particular dissatisfaction, since they were not balanced by similar inspections on Russia’s part.”¹⁹⁰

The Obama administration’s position on the New START inspection regime is that it builds on lessons learned from 15 years of implementing START. This conclusion is questionable since the problems that came up during START implementation were generally not resolved under New START.

One of the worst aspects of the New START verification regime is the increase in the time between notification of an inspection and conduct of the inspection. This change particularly impacts mobile ICBMs, which only the Russians have. The START Treaty mandated that inspectors be taken to an inspection site within nine hours of the declaration of the location to be inspected. Under START, the inspected party had nine hours after the declaration of an inspection at a site to be ready to receive the inspectors. New START increases the time to 24 hours.¹⁹¹ This gives the Russians much more time to move embarrassing items outside of an inspectable area. While this would be a violation of the Treaty, it would not likely deter the Russians. The fact that 24 hours would normally include a period of darkness would facilitate the removal of items, particularly mobile ICBM launchers that are easy to move and conceal.

This impacts both types of inspections allowed under the New START Treaty and is of particular concern with regard to warhead inspections on mobile ICBMs.

Inspections for the elimination of mobile ICBMs are affected the most under New START. Under START, inspectors actually witnessed the final elimination of all mobile ICBMs. This is not the case under New START. For solid-fuel ICBMs, including mobile ICBMs, inspectors do not have the opportunity to observe eliminations. Instead, they are allowed to view a portion of the remains from eliminations. New START provides:

A Party carrying out an elimination of solid-fueled ICBMs, solid-fueled SLBMs, or mobile launchers of ICBMs shall conduct, within a calendar year, two accumulations of eliminated solid-fueled missiles and two accumulations of eliminated mobile launchers of ICBMs at the appropriate conversion or elimination facility. These accumulations shall be conducted in such a manner that no less than 50 percent of the total number of missiles and no less than 50 percent of the total number of mobile launchers of ICBMs scheduled for elimination during a calendar year will be made available for inspection during the two inspections conducted during the period of time specified in subparagraph (a) of this paragraph at each appropriate facility. Each such accumulation shall contain approximately 25 percent of the total number of solid-fueled ICBMs or solid-fueled SLBMs, or approximately 25 percent of the total number of mobile launchers of ICBMs, scheduled for elimination during the corresponding calendar year.¹⁹²

There is nothing in the New START Treaty that would prevent the recycling of the debris. The unique identifier on the missile remnants can easily be changed to create the illusion that missiles are being eliminated.

Verification and British SLBMs

The only element of the START mobile ICBM verification regime that was retained was the most insipid element—unique alpha-numeric identifiers which are stenciled on numbers which can easily be changed. Under New START, the unique identifiers provision is applied to all ICBMs and SLBMs. According to the London *Daily Telegraph*:

Information about every Trident missile the US supplies to Britain will be given to Russia as part of an arms control deal signed by President Barack Obama next week.

Defence analysts claim the agreement risks undermining Britain's policy of refusing to confirm the exact size of its nuclear arsenal.¹⁹³

The Daily Telegraph also reported, "Washington lobbied London in 2009 for permission to supply Moscow with detailed data about the performance of UK missiles. The UK refused, but the US agreed to hand over the serial numbers of Trident missiles it transfers to Britain."¹⁹⁴ This did not happen in any previous U.S. administration.

The Reduction of Public Information on Strategic Forces

After the ratification of New START, Pavel Podvig described the data release provisions of the Treaty:

...the United States did not insist on keeping the transparency mechanism that existed in START, it actually decided to follow Russia in not releasing any data at all. Hans Kristensen [of the Federation of American Scientists] tried to get the information from the U.S. administration, but received the following response from an administration official:

All exchanges are classified and will not be subject to release. [...] There may be some information on very general numbers under the Treaty that could be made public, but that is still to be determined, and will not occur for a least six months if it occurs at all.

This is an absolutely scandalous (as in disgraceful, shameful, outrageous, shocking, infamous, ignominious, flagrant) policy and I certainly hope that the arms control community will work to make the U.S. administration to rescind it.¹⁹⁵

The Heritage Foundation pointed this out before the ratification of the New START in its report on the Treaty.

Unlike the INF and START Treaties, the New START Treaty section on data was completely blank. In both INF and START, the biannual Memorandum of Understanding (MOU) update data were made unclassified and subject to public release 90 days after the information was provided. Under New START, almost all of the data is classified and not releasable without Russian consent. The Treaty reads:

5. The Parties shall hold consultations within the framework of the Bilateral Consultative Commission on releasing to the public data and information obtained during the implementation of this Treaty. The Parties shall have the right to release to the public such data and information following agreement thereon within the framework of the Bilateral Consultative Commission. Each Party shall have the right to release to the public data related to its respective strategic offensive arms.¹⁹⁶

How Podvig expects the United States government to “rescind” a legally binding obligation that exists in the text of the Treaty is unclear. To change the text to allow the United States to release most of the MOU data without Russian consent would require a treaty amendment. During the ratification of New START, arms control enthusiasts turned a blind eye to this until it was too late.

Russia clearly has a veto over the release of most New START data. However, there is nothing in the Treaty that says there must be agreement on all data release. The Obama administration has reportedly asserted to Hans Kristensen that, “**All** exchanges are classified and will not be subject to release,” or that, “There may be some information on very general numbers under the Treaty that could be made public, but that is still to be determined, and will not occur for a least six months if it occurs at all” (emphasis added).¹⁹⁷ But despite the Obama administration’s reported claims, the treaty allows certain data to be release to the public as described below.

There is a similar problem with the May 2010 statement of Assistant Secretary of State Rose Gottemoeller, which described the content of the Treaty, “As a significant step forward in information sharing,” and further added that, “data on the aggregate number of warheads each Party deploys on ICBMs and SLBMs will be exchanged and made publicly available.”¹⁹⁸ Secretary Gottemoeller’s claim is untrue. The information releasable without Russian consent is a tiny fraction of what was possible under START.

The New START Treaty text is quite explicit that there is no need for an agreement to release certain data. It reads:

7. Notwithstanding paragraph 5 of this Article, the aggregate numbers of deployed ICBMs, deployed SLBMs, and deployed heavy bombers; the aggregate numbers of warheads on deployed ICBMs, deployed SLBMs, and nuclear warheads counted for deployed heavy bombers; and the aggregate numbers of deployed and nondeployed ICBM launchers, deployed and non-deployed SLBM launchers, and deployed and non-deployed heavy bombers, *may* be released to the public by the Parties (emphasis added).¹⁹⁹

This statement is essentially repeated in the New START Treaty Article-by-Article Analysis prepared by the executive branch.

On June 1, 2011, the Obama administration released less than the information that it could have under the New START Treaty. It disclosed only the number of accountable deployed warheads, deployed delivery vehicles and the number of deployed and non-deployed delivery vehicles for both the United States and Russia. New START also allows for the release of the number of deployed ICBMs, deployed SLBMs and deployed heavy bombers as individual categories of information. Additionally, New START permits the release of the number of warheads on deployed ICBMs, the number of warheads on deployed SLBMs and the number of warheads counted for deployed heavy bombers. The administration opted not to release this information. It is also permissible to release the total number of deployed and non-deployed ICBM launchers, the number of deployed and non-deployed SLBM launchers and the total number of deployed and non-deployed bombers. The administration decided not to release this data. Pavel Podvig was told that the administration is “working on releasing the detailed U.S. data exchange document.”²⁰⁰ It has not done so. Yet the Treaty explicitly states, “Each Party shall have the right to release to the public data related to its respective strategic offensive arms.”²⁰¹

The Putin autocracy does not want the information to be released. Russian Deputy Foreign Minister Sergei Ryabkov raised an objection to data release saying, “Whether all this has to be made public is another matter,” and that there was no “pressing need for this.”²⁰² According to Russian Deputy Defense Minister Anatoliy Antonov, in a misrepresentation of the Treaty, “That is confidential information, we may post American data and the Americans may post our data but only by consensus. We cannot do that unilaterally.”²⁰³

The Handling of Compliance Issues

The handling of compliance issues is a key part of verification. The late Fred Iklé, former Under Secretary of Defense for Policy, wrote a classic article in *Foreign Affairs* posing the question, “After Detection—What?” Iklé correctly pointed out, “detection of violations is not enough. What counts are the political and military consequences of a violation once it has been detected, since these alone will determine whether or not the violator stands to gain in the end.”²⁰⁴ The mythology of arms control holds that there is an extremely high risk associated with cheating. The reality of arms control is that rarely, if ever, are there any consequences. Then-Senator Malcolm Wallop (R-WY) wrote in 1983 that, “many politicians, having staked their reputations on the agreements, will fear being damaged in the public’s esteem if the agreements were perceived as failures.”²⁰⁵ In the past, previous administrations have dealt with this by suppressing evidence of violations.

The 1979 Senate Select Committee on Intelligence report on SALT II found, “that intelligence of possible Soviet violation of the [SALT I] Treaty was, in some cases, and for a time, withheld from Executive branch officials who had a need for such information. Lacking an oversight committee for intelligence matters, the Congress was not supplied the intelligence information on SALT I monitoring.”²⁰⁶ Establishing special constraints on the dissemination of intelligence relating to arms control compliance sends a message to the Intelligence Community that certain conclusions are frowned upon. In the 1980s, then-Director of Central Intelligence William Casey stated, “I found in SALT I, for example, that some of the judgments were soft. They leaned toward a kind of benign interpretation rather than harder interpretation of assessing or viewing a situation as being more dangerous.”²⁰⁷

Denial of public information on Soviet actions raising compliance issues has been quite common. An example is the Carter administration’s handling of the covert Soviet SS-16 deployment issue. The Carter administration stated, inaccurately, that “we are confident that the Soviets have not deployed any mobile ICBMs.”²⁰⁸ Its assertion was so far off base that then-Senator Joseph Biden (D-DE) stated that the SS-16 issue “can only make one wonder about the depth of Soviet interest in maintaining the SALT framework.”²⁰⁹

The Obama administration has proclaimed its intent to be tough with the Russians if there are arms control violations. Yet it has provided the public little information on Russian arms control violations. As the 2005 Bush administration compliance report noted, Section 403 of the Arms Control and Disarmament Act requires reports in the series to include specific information, to the maximum extent practicable in an unclassified form, on every compliance issue. Despite this, in the 2010 report on the *Adherence to and Compliance with Arms Control, Nonproliferation and Disarmament Agreements and Commitments* (the 2010 compliance report), the Obama administration reverted to Clinton- and Carter-era information denial. The report starts out by stating:

As might be expected under a verification regime with the breadth and intrusiveness of START, a number of compliance questions were raised by our Treaty partners. These questions primarily concerned procedural issues related to inspections, flight tests of submarine-launched ballistic missiles (SLBMs), and telemetry. A number of these issues were resolved in the Joint Compliance and Inspection Commission (JCIC) and through diplomatic channels, while others were under active discussion since 1995.²¹⁰

The report says that some START compliance issues had not been resolved since 1995—the entire duration of the START Treaty. However, the report does not indicate which issues remained unresolved. It is also interesting that the report says that, “The United States raised new compliance issues since the 2005 Report.” It does not identify them. The 2010 compliance Report says that some of the new issues “were closed” rather than “resolved” and gives no indication of what they were or why these issues were “closed.” It also says that, “For some of the unresolved issues which did not change, the United States made a determination not to raise the issue with the other Parties unless there was some future change in the situation.” No explanation is given as to what they were or why this was done. The report lists two major issues from the 2005 report as being resolved—mobile ICBM reentry vehicle inspections and the practice of mobile ICBM launchers moving outside of their production facility to non-declared facilities without notification.²¹¹ With regard to the key issue of mobile ICBM reentry vehicle inspections, the report gives no indication of when or how this issue was resolved.

During the New START ratification hearings, Senator John Barrasso (R-WY) asked, “What is the total number of Russian violations of the verification and inspection procedures under the START Treaty?” Assistant Secretary of State Rose Gottemoeller and the Representative of the Secretary of Defense Edward L. Warner III, replied that, “Issues related to Russia’s compliance with verification and inspection procedures under the New START Treaty are addressed in the Report on Adherence to and Compliance with Arms Control, Nonproliferation, and Disarmament Agreements and Commitments (the Compliance Report) that was provided to the Senate on July 1, 2010.”²¹² Yet the 2010 report contained no unclassified information that would answer the Senator’s question.

In essence, the lack of information in the Obama administration’s 2010 compliance report was apparently aimed at easing problems with the ratification of New START. The Obama administration stated it would take a strong stand if violations of New START occur. Indeed, even the 2011 compliance report did not address Russian compliance with New START. A joint U.S.-Russia briefing on “The New START Treaty” delivered at the NPT PrepCON stated, “Both sides have worked cooperatively to resolve implementation questions as they have arisen.” Yet the 2011 Compliance report does not say anything about what the “implementation questions” that “have arisen” were.²¹³

The Russian compliance record should be a major issue for follow-on strategic nuclear arms control negotiations and, particularly, for the issue of nuclear zero. This issue will be discussed in greater detail in Chapter IV.

What This All Means

The New START Treaty verification regime will not be able to verify Russian compliance with the central limits of the Treaty because: 1) the failure to deal with the START warhead inspection violations in the context of eliminating the START qualitative constraints on ICBMs and SLBMs will make it possible to have at least twice as many warheads on a missile than what is declared; 2) the loss of the START telemetry regime will make it more difficult to evaluate warhead cover size (a key component to monitoring the number of deployed warheads) in the future; 3) the loss of the mobile ICBM verification regime will make it possible to have a covert mobile ICBM force; and 4) the reduction in the number of inspections and notifications and the elimination of short notice inspections will make all types of inspections less effective. The absence of a warhead inspection regime at bomber bases will prevent a valuable opportunity to get practical experience in the operation of a regime which is of great importance to the stated objectives of the Obama administration for the next round of arms control negotiations, which include deeper reductions in strategic nuclear forces and the creation of a regime for tactical nuclear weapons and non-deployed nuclear weapons. It is also noteworthy that the United States offered, and the Russians rejected, a proposal for continuous monitoring at two U.S. nuclear weapons storage areas. That does not bode well for the Obama administration’s agenda of limiting non-deployed or tactical nuclear weapons.

Chapter III

Why We Lost

In the START Treaty, signed in 1991, the United States achieved its objective of reducing the Soviet Union's offensive ballistic missile capability, particularly heavy ICBMs, with a comprehensive verification regime. In START II, the United States was successful in obtaining an agreement to eliminate all MIRVed ICBMs, although the Treaty never entered into force. In the 2002 Moscow Treaty, the United States achieved its objective of codifying the reductions planned as a result of the 2001 Nuclear Posture Review, while avoiding limitations on delivery vehicles, conventional weapons and missile defense. In stark contrast, in New START the Russians won on almost every issue of significance.

In the New START negotiation, the United States sought to protect higher numbers of nuclear delivery systems while reducing deployed warheads. In contrast, Russia wanted lower numbers of delivery systems and higher numbers of deployed warheads. As Chief of the General Staff General Nikolai Makarov summed it up, "This is a treaty that absolutely suits us, with all of its parameters. We firmly went a long way before we signed it, and we persuaded the Americans that it had to be concluded within these very parameters."²¹⁴ Unfortunately, the Russian agenda did not involve reductions in Russian nuclear forces. Colonel General (ret.) Viktor Yesin, former commander the Russian Strategic Missile Forces, who still maintains a relationship with the Strategic Missile Forces as a senior advisor, has stated Russia wanted 1,675 warheads while the United States wanted 1,500 warheads, and Russia wanted 500 deployed delivery vehicles while the U.S. wanted 1,100.²¹⁵ ITAR-TASS, *Kommersant* and RIA Novosti reported the same thing.²¹⁶ Pavel Podvig also wrote that, "We know now, for example, that it was Russia that insisted on putting 1675 into the '1500-1675' range agreed in Moscow in July 2009."²¹⁷

From the U.S. standpoint, the outcome of New START was very bad. It featured: 1) the absence of any reductions in deployed warheads or delivery vehicles on the part of Russia; 2) major loopholes, because of counting rules as well as the lack of limitations and prohibitions on strategic forces resulting from the omission of dozens of important provisions in the START Treaty; and 3) the degradation of the verification regime of the original START Treaty, eliminating many hard-won provisions. This stands in stark contrast to the stated aim of New START, which was to achieve an agreement that set the stage for further verifiable reductions in nuclear weapons and movement toward nuclear zero. The more apparent than real force limits of the New START Treaty are a throwback to the 1970s, to what former Assistant Secretary of Defense Richard Perle called "cosmetic arms control." In addition, the linkage of New START to the pursuit of "nuclear zero" is perhaps the most dangerous aspect of this failed treaty.

Understanding the reasons for the failure of New START will be critical for policy formulation relating to the next possible round of arms control negotiations, if there is any. Predictably, the Russians are saying "no" to any new early negotiations, particularly with regard to tactical nuclear weapons. Early negotiations were rejected by Russian Foreign Minister Sergei Lavrov during the Duma New START ratification proceedings. When asked about a new negotiation on tactical nuclear weapons, Lavrov told the Duma, "Our absolute priority is the implementation of the treaty [which is] being debated today. Our other priorities include a need to understand how

the situation will unfold around the missile defense shield, how issues of conventional weapons are tackled in Europe, and certainly whether or not the problem of preventing the deployment of any weapons in space is resolved.”²¹⁸ After Duma approval of New START, Deputy Russian Foreign Minister Sergei Ryabkov stated in response to a question about tactical nuclear weapons, “We are not even close to discussing the prospect of concluding any agreement in this sphere, the more so as we don’t know yet how the [new] ratified arms reduction treaty will be implemented....Until we see the way commitments undertaken within its framework are fulfilled and to what extent the sides are acting in line with the treaty’s letter and spirit, this issue will be premature for us.”²¹⁹ Russia is also linking future discussions of tactical nuclear weapons to the precondition of the withdrawal of all U.S. tactical nuclear weapons from NATO Europe.²²⁰ In effect, the Russians are saying “give us everything we want from the negotiation before the negotiation starts.”

In March 2011, the Arms Control and International Security Working Group of the U.S.-Russia Bilateral Presidential Commission, chaired by Russian Deputy Foreign Minister Sergei Ryabkov and then-Under Secretary of State Ellen Tauscher, met. According to the Russian Foreign Ministry, the discussion involved missile defense, practical realization of the New START treaty, as well as the modernization of the conventional weapons control regime in Europe. This is the Russian agenda as announced by Ministers Lavrov and Rybakov. Notably absent is anything related to the proposed U.S. agenda, which includes the issue of tactical nuclear weapons. Indeed, according to Sergey Karaganov, dean of the faculty of the Moscow World Economics and Politics at the National Research University, the United States was not pushing Russia on reducing nonstrategic or tactical nuclear weapons in Europe because Moscow does not want these negotiations.²²¹

The Plumage Factor

The “Joint Understanding” with Russia on the START Follow-on Treaty, concluded at the July 2009 Moscow Summit, set the stage for the remainder of the New START Treaty negotiation. As discussed, New START ultimately resulted in the loss of 20 percent of operational U.S. strategic nuclear delivery vehicles in exchange for no reduction in Russian strategic forces, as well as permissive provisions that allow a buildup of Russian strategic nuclear forces. In a commentary on the July 2009 Moscow Summit, columnist Charles Krauthammer observed that, “The signing ceremony in Moscow was a grand affair. For Barack Obama, foreign-policy neophyte and ‘reset’ man, the arms-reduction agreement had a Kissingerian air. A fine feather in his cap. And our president likes his plumage. Unfortunately for the United States, the country Obama represents, the prospective treaty is useless at best, detrimental at worst.”²²²

To be honest, the “plumage factor” has been a part of all arms control negotiations. The mainstream media rarely subject arms control treaties to any serious analysis—they generally play the role of cheerleaders—and many politicians see arms control negotiations as a political plus. However, the “plumage factor” appears to have had a much greater role in New START than in previous negotiations.

The United States should have had a great deal of leverage with Russia with regard to a new arms control agreement for the simple reason that the United States was much better able to maintain its existing forces than was Russia. Yet, in the negotiations leading up to the Moscow Summit, the Obama White House signaled to the Russian government that it was overly eager for an agreement and wanted one on a timeline that was not realistic. Both reduced U.S.

leverage. This violated what Richard Perle and Kim Holmes have called, “The first principle of arms control [which] is to negotiate from a position of strength.”²²³ The Obama administration did the opposite and the Moscow Summit Joint Understanding set the stage for defeat in the negotiation.

On July 6, 2009, Presidents Medvedev and Obama signed the Joint Understanding to guide the remainder of the negotiations. The Joint Understanding committed the United States and Russia to reduce their strategic warheads to a range of 1500-1675, and strategic delivery vehicles to a range of 500-1100.²²⁴ As Russian Deputy Foreign Minister Sergei Ryabkov pointed out at the time, the Joint Understanding included the “basic parameters” of the future treaty.²²⁵

In reality, very little was actually agreed at the Summit, although the summit documents created the opposite impression. The Joint Understanding hurt the U.S. negotiating position because it gave priority to reducing nuclear delivery vehicles (the Russian agenda) rather than reducing nuclear warheads (the U.S. agenda). This was to shape the end result of the negotiation—the largest cut was in delivery vehicles, which impacted only the United States. Moreover, the United States made other significant concessions. The Joint Understanding also said that the Treaty would record: “A provision on the interrelationship of strategic offensive and strategic defensive arms” and “A provision on the impact of intercontinental ballistic missiles and submarine-launched ballistic missiles in a non-nuclear configuration on strategic stability.” Again, this was the Russia agenda and the Russians prevailed.

In a summit press interview on July 6, President Obama made a misleading statement about missile defense. He ignored the content of the Joint Understanding which he had just signed and stated that, “In our meeting in London on April 1st, President Medvedev and I issued a joint statement on instructions for our negotiators for this new treaty. These instructions very explicitly did not mention missile defense as a topic of discussion for these negotiations.”²²⁶ The just-signed Joint Understanding, however, did commit the United States to discuss missile defense capabilities during the negotiation. The April and July statements were dramatically different with regard to the handling of missile defense during the negotiations.

In Moscow, the Obama administration’s eagerness to conclude an agreement sent a clear signal to the Russian government to hang tough on its unreasonable demands. Just a few days before the Moscow Summit, the distinguished Russian journalist Pavel Felgengauer, writing about the New START negotiation, reported increased oil prices had encouraged the Russian leaders, who were demanding that the United States make unilateral concessions on all points, while offering “practically nothing” in exchange.²²⁷

The “plumage factor” apparently continued to play a role in the Obama administration’s pursuit of New START. Indeed, in November 2010, the Russian newspaper *Kommersant* stated that, “The White House is in a hurry to sign the new START agreement by 10 December [2009], when the presentation of the Nobel Prize to US President Barack Obama is to take place in Stockholm.”²²⁸ The story attributed this to a source in the Kremlin who said that, “The presentation of Nobel Prizes to the laureates takes place in Stockholm on 10 December. And our partners would like the document to have been signed before the presentation of the Nobel Peace Prize to Barack Obama.” This was a bad signal to send to the Russians from the standpoint of negotiating leverage.

Embracing the Mythology of Arms Control

Writing in 2009, former Under Secretary of Defense Douglas Feith and former Director of Strategic Arms Control Policy at the Defense Department Abram Shulsky noted that, “Despite President Barack Obama’s strange, pre-Moscow summit remark last month in a New York Times interview that the U.S. and Russia are continuing to ‘grow’ their nuclear stockpiles, both countries have in fact reduced their stockpiles drastically since the Soviet Union disintegrated in 1991.”²²⁹ There is actually nothing strange about this. This is part of the mythology of arms control which the Obama administration has embraced.

It is clear that the Obama administration accepts the validity of the doctrine of Mutual Assured Destruction (MAD). In the 1960s, then-Secretary of Defense Robert McNamara enunciated his view of arms control and the nuclear arms race in a speech delivered to United Press International editors in September 1967. According to McNamara, “Our alert forces alone [in 1967] carry more than 2,200 weapons, each averaging more than the explosive equivalent of one megaton of TNT. Four hundred of these delivered on the Soviet Union would be sufficient to destroy over one-third of her population and one-half of her industry. All these flexible and highly reliable forces are equipped with devices that ensure their penetration of Soviet defenses.”²³⁰ He argued that we should not deploy defenses against the Soviet Union because it would create an “action-reaction” arms race.

MAD is based on the belief in mutual vulnerability as a deterrent strategy and a negotiating outcome, and in the danger of the so-called “action-reaction arms race.” McNamara’s “action-reaction arms race” is literally historical mythology but it had an inordinate impact on the failed arms control agreements of the 1970s. This belief system virtually guarantees defeat in arms control negotiations, because under the MAD doctrine there is little possibility of a bad outcome—one that would deny the ability to destroy a significant numbers of cities in a retaliatory attack—irrespective of what the impact the Treaty actually is on force options. Thus, it encourages loss of focus on the other objectives of arms control.

Albert Wohlstetter was one of the great post-World War II theorists of nuclear strategy. In the 1970s, he demolished the theory of Mutual Assured Destruction and the “action-reaction” arms race on empirical grounds. Richard Perle notes Wohlstetter “demonstrated that U.S. and Soviet strategic weapons programs were largely independent of each other and that American nuclear weapons had peaked 15 years earlier and had been declining ever since, even as Soviet programs had expanded significantly.”²³¹

It was not only Wohlstetter who pointed out the problems with McNamara’s action-reaction theory. Richard Foster of the Stanford Research Institute reached a similar conclusion after also looking at the actual history of arms deployments. When working at the Stanford Research Institute in the early 1970s, this author was informed that McNamara was briefed on the results of these studies but ignored them. As a result, the mythology reached a level where it was actually characterized as a “law” of international relations. Keith Payne has accurately observed that this belief “would be laughable if the subject were not serious.”²³² Payne also pointed out that Soviet weapons deployments after the 1972 ABM Treaty “were the reverse of the BMD opponents confident predictions....The number of deployed Soviet intercontinental ballistic missile warheads increased from 1,547 in 1972 to 6,420 in 1985, and the Soviet submarine-launched ballistic missile (SLBM) warheads increased from 497 in 1972 to 2,307 in 1985.”²³³ This happened despite the MAD legacy of strategic arms control agreements—SALT I and

SALT II. The abandonment of MAD by Ronald Reagan resulted in the most successful treaties (the INF Treaty, START I and START II) in the history of nuclear arms control.

The Obama administration added a new twist to MAD. President Obama has made the Nuclear Non-Proliferation Treaty and nonproliferation central to the arms control agenda, unlike the original MAD doctrine which did not relate to proliferation. In the April 2009 Prague speech in which he advocated eventual total nuclear disarmament, President Obama characterized the Nuclear Non-Proliferation Treaty (NPT) as follows: “The basic bargain is sound: Countries with nuclear weapons will move towards disarmament, countries without nuclear weapons will not acquire them, and all countries can access peaceful nuclear energy.”²³⁴ The 2010 Nuclear Posture Review, reiterates this theme: “By reducing the role and numbers of U.S. nuclear weapons—meeting our NPT Article VI obligation to make progress toward nuclear disarmament—we can put ourselves in a much stronger position to persuade our NPT partners to join with us in adopting the measures needed to reinvigorate the non-proliferation regime and secure nuclear materials worldwide.”²³⁵

The Obama administration’s interpretation of Article VI of the NPT is not accurate. Article VI actually reads, “Each of the Parties to the Treaty undertakes to pursue negotiations in good faith on effective measures relating to cessation of the nuclear arms race at an early date and to nuclear disarmament, and on a treaty on general and complete disarmament under strict and effective international control.” The obligation applies to all parties, not only the nuclear weapons states. The core of the NPT was characterized succinctly by then-Secretary of Defense Robert Gates in October 2008: “Ever since the Nuclear Non-Proliferation Treaty was signed in 1968, the international community has recognized that the fewer nuclear-armed states, the better.”²³⁶ The United States should not need to make concessions over important national security capabilities in order to motivate the international community to take effective action to constrain nuclear proliferation.

Feith and Shulsky summed up the Obama administration’s attempt to link strategic arms control with non-proliferation:

Mr. Obama here is mixing up pretext and policy. When criticized for pursuing nuclear weapons, proliferators like North Korea and Iran make diplomatic talking points out of the size of the great powers’ arsenals. They try to shift the focus away from themselves by complaining that the Americans and Russians aren’t working hard enough to reach disarmament goals envisioned in the Nuclear Non-Proliferation Treaty. But depriving proliferators of such talking points won’t affect their incentives to acquire nuclear weapons—or the world’s incentives to counter the dangers that the North Korean and Iranian nuclear programs pose to international peace.²³⁷

In April 2011, after two years of claiming that formal arms control agreements were necessary because of the linkage to nuclear proliferation, a “senior administration official” reportedly stated that instead of negotiated reductions, further cuts in US nuclear forces could be made “independent of negotiations with Russia.”²³⁸ This shift in the Obama administration’s policy may very well constitute recognition that it has little chance of achieving its stated goals with Russia for a post-START negotiation, having sacrificed so much in New START in exchange for so little.

Ideological Blinders and Russian Nuclear Ambitions

Throughout the New START negotiation the Obama administration seemingly ignored the inconvenient fact that Russian views about nuclear weapons are completely different from those of the United States and the West in general. For Russia, as Chief of the General Staff General Nikolai Makarov stated during the New START negotiations, the strategic nuclear forces are a “sacred issue.”²³⁹ The anti-nuclear weapons idealism of the Obama White House was interpreted in Russia in a way completely different from what the White House intended. President Obama essentially started the negotiation with his Prague speech on nuclear zero. It seemed directed at the international left, who loved it. Unfortunately, the Obama administration was negotiating with Putin’s Russia. Just after the speech, Russian Deputy Foreign Minister Sergei Ryabkov characterized nuclear zero as “a romantic notion,” adding that the, “Grim reality, first of all, suggests the need to deal with more realistic things, that is, with the implementation of the arrangements to cut strategic offensive arms to the level lower than that fixed under the [1991] START-1 treaty.”²⁴⁰ As Pavel Felgengauer pointed out, a proposal for “significant nuclear disarmament is unacceptable to the Russian military and coming from an American president it is regarded as a cynical ploy to gain total military superiority over the country.”²⁴¹ Russia, he said, was not interested in nuclear zero and intended to retain as many nuclear weapons as it could afford. During the Clinton administration, the Central Intelligence Agency reached the same conclusion: “Russia will maintain as many strategic missiles and associated nuclear warheads as it believes it can afford, but well short of START I or II limitations.”²⁴²

The Obama administration’s 2010 Nuclear Posture Review acknowledged that “Russia continues to modernize its still-formidable nuclear forces,” and that, “Russia maintains a much larger force of non-strategic nuclear weapons, a significant number of which are deployed near the territories of several North Atlantic Treaty Organization (NATO) countries.”²⁴³ It suggests that this problem will be dealt with by “dialogue” in which, “For its part, Russia could explain its modernization programs, clarify its current military doctrine (especially the extent to which it places importance on nuclear weapons), and discuss steps it could take to allay concerns in the West about its non-strategic nuclear arsenal, such as further consolidating its non-strategic systems in a small number of secure facilities deep within Russia.”²⁴⁴

The view that “dialogue” is going resolve the problem is based on a fundamental misunderstanding of the substance of Russia’s nuclear doctrine. The reality is that nuclear weapons are an integral part of Russia’s national security posture. Although there are some classified elements of the Russian nuclear doctrine, the basic problem is not lack of knowledge of the Russian views but rather the substantive content of the Russian views. The Russians never cease to talk about nuclear weapons and their nuclear strategy. They constantly employ nuclear threats for political gain. Indeed, then-Secretary of Defense Robert Gates, who approved the 2010 Nuclear Posture Review report, with DOE Secretary Samuel Bodman, provided a more realistic assessment of the role of Russian nuclear weapons in September 2008 under President George W. Bush. After outlining the specific nuclear modernization programs that were underway in Russia, he stated:

For a variety of reasons, Russia has explicitly placed increased emphasis on nuclear weapons in its national security policy and military doctrine, and has re-incorporated theater nuclear options into its military planning.

Even as the United States and its allies work to engage Russia cooperatively, and to promote greater transparency and predictability with respect to nuclear forces and other military capabilities, considerable uncertainty remains about Russia's future course.²⁴⁵

Recent statements by the then-Prime Minister Vladimir Putin have highlighted Russia's nuclear modernization program and operational readiness (e.g., the resumption of Russian long-range bomber patrols near U.S. and allied territories). Putin's statements, together with Russia's across-the-board modernization of its strategic capabilities, increase concern regarding Russia's intentions. Russia has also threatened to target possible future U.S. ballistic missile defense sites in Eastern Europe. In light of these uncertainties, maintaining a nuclear force second to none, consistent with the 2001 Nuclear Posture Review, remains a prudent approach. For the same reasons, continuing U.S. security commitments to NATO and other allies—including the commitment of U.S. nuclear capabilities—remain vital.

Since the rise of Vladimir Putin, Russia has explicitly reserved the right to use nuclear weapons not only in response to nuclear or other WMD attack but also in response to conventional attack. Putin played a direct and personal role in the development of Russia's first-use doctrine which he signed into law as Acting President. The military doctrine stated, "The Russian Federation retains for itself the right to use nuclear weapons in response to the use of nuclear and other kinds of weapons of mass destruction against it and its allies, and in response to wide-scale aggression using conventional weapons in situations critical to the national security of the Russian Federation and its allies."²⁴⁶ In October 2009, Nikolay Patrushev, the Secretary of the Russian Security Council (the Russian equivalent of the U.S. White House national security advisor), stated that, "*We have corrected the conditions for use of nuclear weapons to resist aggression with conventional forces not only in large-scale wars, but also in regional or even a local one.... There is also a multiple-options provision for use of nuclear weapons depending on the situation and intentions of the potential enemy. 'In a situation critical for national security, we don't exclude a preventive nuclear strike at the aggressor'*" (emphasis in the original).²⁴⁷

Since 2007, senior Russian leaders have made about 15 separate threats of targeting nuclear strikes against specific countries or against unspecified counties. For example, in early 2007, President Putin unleashed an unprecedented attack on the United States and its missile defense plans which soon featured overt threats of nuclear attack. In February 2007, then-Defense Minister Sergei Ivanov told the Duma in regards to, "[the] use of nuclear weapons in case of aggression, of course [it will use them in this case]. What else were they built for?"²⁴⁸ A few days later, Colonel-General Nikolai Solovtsov, then-commander of the Strategic Missile Forces, made a nuclear targeting threat against Poland and the Czech Republic, if they allowed a small U.S. missile deployment.²⁴⁹ In April 2007, General Yury Baluyevskiy, then-chief of the Russian General Staff, once again threatened to target U.S. missile defense facilities in Europe, saying the question of the use of nuclear weapons was "a technicality."²⁵⁰ In perhaps the most militant nuclear related statement in the history of the Russian Federation, in January 2008, General Yuriy Baluyevskiy declared that, "We do not intend to attack anyone. But all our partners must realize that for the protection of Russia and its allies, if necessary, the Armed Forces will be used, including preventively and with the use of nuclear weapons."²⁵¹ Russian Defense Ministry spokesman Deputy Chief of the General Staff Colonel General Anatoly Nogovitsyn threatened a nuclear attack on Poland, which was "100 percent" certain, if it allowed U.S. missile defenses to be deployed on its territory.²⁵²

Despite U.S. protests against such inflammatory rhetoric, Russia continued to make numerous threats of this type. In early 2008, then-Czech Foreign Minister Karel Schwarzenberg observed that, in Western democracies, generals who issue political declarations or voice such threats would be fired the next day.²⁵³

The reasons the generals were not fired were that the orders came directly from the top. During this period, then-President Putin made four separate nuclear targeting threats:

- Just before a summit with President Bush, he stated, “I draw your attention and that of your readers to the fact that, for the first time in history—and I want to emphasize this—there are elements of the U.S. nuclear capability [missile defense interceptors] on the European continent....If the American nuclear potential grows in European territory, we have to give ourselves new targets in Europe.”²⁵⁴
- In a press conference with the President of Ukraine on that country’s possible inclusion in NATO, he said, “in response to the deployment of such facilities in Ukrainian territory, which cannot theoretically be ruled out, Russia could target its missile systems at Ukraine.”²⁵⁵
- In a press conference with the President of Poland he stated, “If it appears, we will be forced to respond appropriately—we will have to retarget part of our systems against those missiles.”²⁵⁶
- At a press conference, President Putin said, “Our General Staff and experts believe that this system [the proposed deployment of a missile defense site in Poland] threatens our national security, and if it does appear, we will be forced to respond in an appropriate manner. We will then probably be forced to retarget some of our missile systems at these systems, which threaten us.”²⁵⁷ These bellicose statements were made about a U.S. missile defense system, which, when completed, is going to be smaller than the deployed and operational missile defense system around Moscow.

In addition to the nuclear targeting threats, the Russians also threatened to forward deploy nuclear weapons (including nuclear-capable Iskander missiles), wage an arms race, and develop nuclear superweapons. In August 2007, then-President Putin sought to intimidate the United States, Japan and NATO Europe by announcing, “Combat alert has begun today. Twenty strategic missile carriers are taking part in it. The planes that have scrambled, [and] will be in the air for 20 hours with refueling and in interaction with the Navy.”²⁵⁸ After this, Russian nuclear bombers were deliberately flown into air defense identification zones, on some occasions overflying the territory of Japan, and entering Dutch and United Kingdom (U.K.) sovereign air space during the New START negotiations. While actual overflights were rare, nuclear intimidation flights were common. In March 2010, the U.K. Defense Ministry revealed that, “...RAF has been scrambled no fewer than 20 times in the last year to repel Russian warplanes.”²⁵⁹ *The Daily Mail* reported that the U.K. believed that Putin was responsible. In addition to routine flights into U.S. air defense identification zones, Russian bombers overflew a U.S. aircraft carrier during the New START negotiations.²⁶⁰

President Obama himself was “welcomed” to the White House by such a bald threat from then-Russian President Medvedev. The day after the 2008 U.S. presidential election, President Medvedev laid down the nuclear gauntlet:

Therefore I will now announce some of the measures that will be taken. In particular measures to effectively counter the persistent and consistent attempts of the current American administration to install new elements of a global missile defence system in Europe. For example, we had planned to decommission three missile regiments of a missile division deployed in Kozelsk from combat readiness and to disband the division by 2010. I have decided to abstain from these plans. Nothing will disband. Moreover, we will deploy the Iskander missile system in the Kaliningrad Region to be able, if necessary, to neutralize the missile defence system. Naturally, we envisage using the resources of the Russian Navy for these purposes as well. And finally, electronic jamming of the new installations of the U.S. missile defence system will be carried out from the territory of the same westernmost region that is from Kaliningrad.²⁶¹

Just before the July 2009 Moscow Summit, *Russia Today* reported that, “Kavkaz-2009”—a military exercise of a scale comparable to those in the Soviet era begins on Monday in Southern Russia. It will run until July 6, when US President Barack Obama arrives in Moscow.”²⁶² In August 2009, “Two nuclear-powered Russian attack submarines have been patrolling in international waters off the East Coast for several days, in activity reminiscent of the Cold War, defense officials said Tuesday.”²⁶³

An important New START ministerial meeting was held in Moscow in October 2009. According to an unnamed American diplomat speaking just before the meeting, both sides were committed to the meeting, but it was difficult.²⁶⁴ Apparently, the Russians were not committed to a cooperative atmosphere during the meeting. While Secretary of State Hillary Clinton was in Moscow negotiating with Russian Foreign Minister Lavrov, Secretary of the National Security Council Nikolay Patrushev stated that, “In situations critical for national security, a nuclear strike, including a pre-emptive one, against an aggressor is not ruled out.”²⁶⁵ Secretary Clinton did not comment on the obvious provocation but merely commented, “We have had a very productive and comprehensive set of discussions.”²⁶⁶

Just after the Clinton-Lavrov meeting, the London *Daily Telegraph* reported, “The [Russian] armed forces are said to have carried out ‘war games’ in which nuclear missiles were fired and troops practiced an amphibious landing on the country’s [Poland’s] coast.”²⁶⁷ Immediately after the exercise, Radosław Sikorski, Poland’s foreign minister, asked that U.S. troops be stationed in Poland to serve as a shield against Russian aggression. In December 2009, while intensive New START negotiations were underway, Lieutenant General Andrey Shvaychenko, then-commander of the Strategic Missile Forces, stated, “In a conventional war, the [strategic missile forces] ensure that the opponent is forced to cease hostilities, on advantageous conditions for Russia, by means of single or multiple preventive strikes against the aggressors’ most important facilities.”²⁶⁸ In February 2010, during the New START endgame, he declared, “in a nuclear war the updated [strategic missile forces] will participate effectively in destroying targets of enemy military and economic potentials by delivering a first massive missile-nuclear strike and subsequent multiple and single missile-nuclear strikes.”²⁶⁹

There was no public U.S. response to these Russian provocations. Despite this type of behavior by Russian officials, the 2010 Nuclear Posture Review concludes, “the need for strict numerical parity between the two countries is no longer as compelling as it was during the Cold War.”²⁷⁰ This placatory attitude explains much of what happened in the New START negotiation.

The Obama White House obviously knew that the treaty being negotiated would not reduce Russian strategic forces and would allow both a qualitative and quantitative Russian buildup in the later years of New START. Throughout the New START negotiation, the Russians broadcasted this conclusion loudly and clearly. General Nikolai Solovtsov, then-commander of the Strategic Missile Forces, said, “I would like to specifically point out that not a single launcher, and not a single regiment will be withdrawn from service before the life cycle expires.”²⁷¹ It was also obvious, as Pavel Felgengauer pointed out, that Russia can’t run a nuclear arms race in the absence of START constraints while the United States does not see any sense in doing it.²⁷² As Keith Payne and Thomas Scheber have pointed out, “The administration’s claim about the urgent need to ratify New START and initiate its verification provisions, however, blatantly contradicts the administration’s own public statements about the absence of any Russian military threat to us or our allies. It is also belied by the very fact that the administration finds acceptable New START’s many loopholes and lapses in verification procedures.”²⁷³

Because of the administration’s ideological blinders, its policies apparently precipitated exactly the opposite of its stated arms control objectives. They created an opportunity that Russia exploited successfully. In the words of Pavel Felgengauer, “During ratification procedures in the Duma, Defense Minister Anatoliy Serdyukov, announced: ‘It is a very useful treaty—it allows us to significantly increase our [nuclear] armaments, while the Americans will have to cut theirs.’”²⁷⁴

Ideological Blinders and “Reset”

The New START Treaty was described by the Obama administration both as an instrument and the product of the “reset” in U.S.-Russian relations. In reality it is probably neither.

There was a fundamental inconsistency in the Obama administration’s approach to Russia: it simultaneously sought the pursuit of arms control and the so-called “reset” policy. These approaches are mutually exclusive. If we care about the outcome of arms control negotiations, the process has to be inherently adversarial. If we don’t care about the outcome or are blinded by ideological views about Russia, we will lose in the negotiation. This was the case in New START.

The Bush administration pursued its own version of “reset,” although did not call it by that name. It was not linked to arms control and it achieved some degree of success. While the Bush administration gave Russia the Moscow Treaty as a “present,” it opposed future arms control agreements with Moscow. As then-Under Secretary of Defense Douglas Feith explained this: “We do not negotiate with Britain or France with regard to the permitted features of our respective nuclear capabilities. Although our relations with Russia are not yet comparable to our relations with our allies, they are not based on Cold War hostilities.”²⁷⁵

In the words of former Under Secretary of State John Bolton, “...all the ‘new’ directions emanating from the [July 2009] Moscow summit are all essentially reversals of recent U.S. policy. The Russians should be happy; most people are when they get their way.”²⁷⁶ Mikhail Margelov, head of the Russian Federation Council’s International Affairs Committee, apparently agrees. He told *RIA Novosti* that, “The most important thing is that our relations with the USA are clearly improving, and without notable concessions from Russia, unlike in the 1990s.”²⁷⁷

What has the United States gotten from New START? Most significantly, there will be no reductions in the number of deployed Russian nuclear warheads or delivery vehicles as a result of this treaty. Moreover, Moscow has announced a Russian buildup in strategic nuclear forces. Prior to New START the Russians never discussed matching the United States in numbers of strategic nuclear delivery vehicles. That is apparently now achievable as a product of the 25 percent reduction in U.S. delivery systems mandated by New START.

Have there been any benefits to the United States from the “reset” policy? According to *The Economist*, “The aim of the reset was not to change Russia...”²⁷⁸ “Reset” has turned a blind eye to what is going on in Russia today. Ted. R. Bromund writing in *Commentary*, concluded, “We have to deal with Russia, but we don’t have to hold public events in which we pretend to respect its nonexistent devotion to freedom.”²⁷⁹ As Leon Aron of the American Enterprise Institute has written, “By 2007, there were an estimated 6,000 former KGB officers in the top and middle ranks of the Russian government.”²⁸⁰ He continued, “This grievance-based public political culture, assiduously fashioned and fueled by the Kremlin—a culture of loss, wounded pride, frustrated hopes, imperial nostalgia, and perennial vigilance—coincided with a foreign policy of resentment, defiance, and retribution. It was heralded by Putin’s ferocious attack on the United States at an international conference in Munich in February 2007.”²⁸¹

Prior to the 2012 Russian presidential election, an editorial in the *Moscow Times* observed, “If Putin or a third candidate takes office, the reset will be over.”²⁸² Putin is now back.

Inexperience and Lack of Preparation

Despite the inexperience at the top levels of the Obama administration regarding Russia and arms control, it plunged into the New START negotiation with minimal preparation. This is in stark contrast with the Reagan administration, which waited to begin the START Treaty negotiation until a year and a half of preparation after the presidential inaugural. In the words of Ambassador Ron Lehman, then-assistant secretary of defense for international security policy and later director of the Arms Control and Disarmament Agency, “Ronald Reagan’s success in arms control is directly the consequence of high standards of careful preparations, tough bargaining and steadfastness of purpose in the face of sharp and shifting political winds.”²⁸³ Reagan conducted an extensive review of arms control and nuclear deterrence before establishing U.S. objectives for the negotiation.

The recognition of the need for detailed preparation was not unique to the Reagan administration. No previous administration had started a new strategic arms control negotiation with so little preparation time. The lack of preparation during the Obama administration reflected the fact that ideology, not analysis, was the engine driving the engagement with Russia.

The Obama administration decided on the number of nuclear weapons that would be required in our nuclear arsenal in about two months of time. A decision on the number of nuclear weapons needed is usually one of the last decisions that is made in a nuclear posture review because it depends on many factors that have to be decided first. In the complex security environment and uncertainty of the twenty-first century, this is not the type of exercise that can be done in a month or two. Indeed, in March 2011, the Associated Press reported that the administration had just begun a review that, “...will look at issues such as what targets the U.S. would have to

hit with nuclear weapons in a worst-case scenario and what kind of weapons it would need to hit them.”²⁸⁴ This *ex post facto* analysis should have been done before negotiations began.

Even before the New START negotiations began, former Under Secretary of State John Bolton recommended that the United States should decide on what levels of nuclear forces were needed before the negotiations began. His advice was not taken. The Nuclear Posture Review was not completed until after the Treaty had been signed.

The outcome of the NPR analysis on the required number of nuclear warheads was dictated by the pace of the negotiations. As early as the April 1, 2009 Joint Statement of Presidents Obama and Medvedev, it was agreed that, “In the future agreement the Parties will seek to record levels of reductions in strategic offensive arms that will be lower than those in the 2002 Moscow Treaty on Strategic Offensive Reductions, which is currently in effect.”²⁸⁵ This is important because without time for any serious analysis of warhead requirements, the Obama administration agreed that the number of deployed nuclear warheads was going to be under 1,700 and, more significantly, that theater and tactical nuclear weapons would not be limited.

The U.S. chief negotiator, Rose Gottemoeller, made a major concession to Russia prior any NPR decision. In an interview with the Russian news agency Interfax, she stated that, “In the presidents’ instructions after London it was quite clear that the focus of negotiations will be strategic offensive armaments and that it includes delivery vehicles and warheads.”²⁸⁶ The Joint Statements released at April 2009 summit said nothing about limiting delivery vehicles. There was nothing self-evident about this outcome.

The lack of preparation for the negotiation was illustrated by the handling of the missile defense issue. The Obama administration’s missile defense review was not completed until September 2009, well into the New START negotiation. Yet the administration was obviously negotiating about missile defense from day one of the discussions. In anticipation, senior Russian officials were talking openly about missile defense limitations as a major New START issue even before the first meeting on New START.

Russian objectives with regard to a post-START arms control agreement clearly needed to be assessed before a credible negotiating strategy could reasonably be developed. The administration did not take the time to conduct such an analysis of options. The lack of preparation on the U.S. side was apparent during the negotiation as important U.S. treaty language was abandoned in favor of the Russian version.

Even early in the negotiations, the Russians were broadcasting loudly and clearly that there was going to be trouble with regard to basic U.S. objectives. On March 28, 2009, Colonel General Anatoly Nogovitsyn, deputy chief of the General Staff, made it clear what the Russian objectives were: “The drawbacks of the previous treaty must be eliminated, taking into account Russia’s position.”²⁸⁷ The previous treaty, START, contained many provisions that were the result of detailed preparation and skillful negotiating.

A core issue with regard to the New START preparations should have been the Russian compliance record with previous agreements. This is particularly relevant because the Obama administration was seriously talking about making substantial progress toward “nuclear zero,” with all the unprecedented risks that such an outcome poses. At “nuclear zero,” the inconvenient truth is that any nation that cheats on the agreement can easily destroy or coerce

any nation that does not. Yet the Obama administration did not seriously consider the Russian compliance record before President Obama made his Prague speech on nuclear zero or, indeed, until after the conclusion of the New START Treaty. It did not send a compliance report to the Congress until July 2010, months after the Treaty was signed. The Russian record of compliance with arms control treaties is discussed in the next chapter.

“If You Want it Bad You Get It Bad”

Douglas J. Feith, former under secretary of defense for policy, provided the following assessment of New START: “Mr. Obama’s poor negotiating is a cautionary tale: If you want it bad you get it bad.”²⁸⁸ He said the Bush administration had rejected many of the same positions the Obama administration had accepted and yet got an agreement with Russia.

The same thing could have happened under the Obama administration (although it would have taken longer to get an agreement). In July 2009, in a *Wall Street Journal* interview on New START, Vice President Joseph Biden stated that, “I think we vastly underestimate the hand that we hold.”²⁸⁹ He was correct. He then pointed out that economic troubles played a central role in Moscow’s strong desire to restart nuclear reduction talks because Russia could no longer afford to maintain an arsenal that, while much smaller than Cold War levels, is still by far one of the two largest in the world. Vice President Biden said, “All of sudden, did they have an epiphany and say: ‘Hey man, we don’t want to threaten our neighbors?’ No. They can’t sustain it.” A Russian journalist recognized the same thing. According to Pavel Felgengauer, Russia can’t replace the old Soviet missiles and is incapable of building modern weapons.²⁹⁰

There was no need to rush into a New START treaty. Russia produces less than one-tenth of the gross national product of the United States, its defense procurement system is riddled with corruption, and its technology is generally inferior. Any agreement with Russia on the basis of equality is literally a gesture of goodwill by the United States, not a national security imperative. Despite this, the obsessive eagerness of the Obama administration for the achievement of an agreement on New START prior to the expiration of the START Treaty seriously weakened its negotiating leverage. Indeed, ITAR-TASS reported that as early as April 2009 Russian Foreign Minister Sergei Ryabkov told Interfax that, “There are many signs that allow me to state with a sufficient level of certainty that the current administration will take into consideration our priorities and preferences to a larger extent than the George Bush administration.”²⁹¹ This is not a desired perception for the other side to have if the objective of negotiations is an outcome that accomplishes U.S. objectives. As early as April 2009, Minister Ryabkov was signaling that, “I do not believe anything extraordinary is going to happen in terms of a reduction in these parameters [strategic arms]. Prerequisites for this are not yet in place, and in my view there are no grounds today for speaking of such radical cuts.”²⁹² He also signaled that the focus of the negotiation would be the Russian agenda of reducing delivery vehicles, “As regards delivery vehicles, here we have the parameters of the START treaty, and they have long been surpassed. So, ultimately, one should simply look and see how far the parties are willing to go on.” Thus, from the very beginning, it was clear that the Russians would not agree to significant warhead reductions in Russian forces but would push for delivery vehicle reductions that would only impact the United States.

There was no urgent need to seek an agreement by December 2009—when the START Treaty expired. The U.S. push for a prompt treaty came at the price of both little substance and limited verification. The Obama administration had plenty of time to negotiate a substantive and

effectively verifiable arms control agreement, because Russia was not very active at the time regarding strategic weapons modernization and deployment. While the Russians had a broad-based strategic force modernization program and a nuclear weapons development program underway, their production rate, because of financial constraints, was very limited in numbers. For example, from the demise of the Soviet Union until the last START data update in mid-2009 the Russians added only 65 single warhead ICBMs. In 2009 the Russian Bulava SLBM was still routinely experiencing catastrophic launch failures and there was no prospect of deployment any time soon. In general, Russia was losing strategic forces far faster than it was adding to them. In January 2009 only eight Russian ballistic missile submarines were reported as operational.²⁹³

New START does little or nothing to constrain the long-term Russian threat. Moreover, even as early as May 2009, the Obama administration made it clear that it intended to ask very little from Russia in the negotiation. Throughout the New START negotiations Russian generals were saying that, to quote Colonel General Nikolai Solovtsov, “Not a single launch system, not a single missile regiment is being removed or will be removed from the force composition if they have a service life that has not been spent. This approach will also be preserved in implementing a new treaty, which will be concluded with the USA instead of START-1, whose term of validity expires in December.”²⁹⁴

What It All Means

The Obama administration failed to achieve its negotiating objectives in New START. It ended up with an agreement with limits on deployed warheads and delivery vehicles that were higher than Russia actually had at the Treaty’s entry into force, but required substantial reductions by the United States. Not a single operational Russian weapon will be reduced because of the treaty. This is a unique achievement in the history of strategic control negotiations.

According to former Duma official Alexei Arbatov and Major General (ret.) Vladimir Dvorkin, “a unique feature of the new Treaty is the fact that during the negotiations the United States did not seek to eliminate, reduce or limit any of the other side’s weapons or programs in particular (such as, for example, Soviet or Russian heavy ICBMs or mobile missiles, which were the focus of talks in previous times)...”²⁹⁵ Worse still, this happened in the context of U.S. concessions of major significance—the unilateral elimination of 20 percent of U.S. nuclear-capable delivery systems, a substantial degradation of the START verification regime in New START, and concessions on missile defense and counting conventional ballistic missile warheads.

There is no indication that the administration has learned from its failure in New START. Indeed, after the entry into force of New START, the Obama administration is clearly once again negotiating the Russian agenda, this time discussing missile defense in the forlorn hope that this will change Russian attitudes and encourage progress toward further reductions in strategic and tactical nuclear weapons. It is very unlikely that the Obama administration will achieve objectives that enhance U.S. security in a post-New START negotiation unless it fundamentally changes the way it approaches negotiations.

Chapter IV

Russia's Violations of Its Arms Control Obligations

The history of Soviet/Russian arms control treaty violations is a book in itself. This chapter is not intended to be a comprehensive history of Soviet/Russian noncompliance with arms control agreements. Rather, it will focus on issues that have direct relevance to the New START Treaty and to the dangerous Obama agenda for follow-on strategic nuclear arms control.

Soviet/Russian violations of arms control commitments have been numerous and consistent throughout the last forty years. It does not matter whether the commitments are politically or legally binding. The Soviets/Russians have consistently demonstrated disregard for commitments that prevent them from achieving their objectives for their nuclear capability. Moreover, they will lie about what they were doing and formulate excuses to rationalize their behavior. The Russians violate treaties irrespective of the risk of detection, apparently because they know from experience that there are rarely any penalties imposed on them for noncompliance. Unfortunately, the United States has learned few lessons from forty years of Soviet/Russian noncompliance.

Compliance and enforcement has always been the Achilles' heel of arms control. Historically, the handling of compliance issues has been anything but straightforward. As noted earlier, the Senate Select Committee on Intelligence reported in 1979, "It is clear from the SALT I record that intelligence of possible Soviet violation of the Treaty was, in some cases, and for a time, withheld from Executive branch officials who had a need for such information. Lacking an oversight committee for intelligence matters the Congress was not supplied the intelligence information on SALT I monitoring."²⁹⁶

In a 1978 report, the House Intelligence Committee concluded that, "Dr. [Henry] Kissinger wanted to avoid any written judgment to the effect that the Soviets have violated any of the SALT agreements. If the Director [of the CIA] believes the Soviets may be in violation, this should be the subject of a memorandum from him to Dr. Kissinger. The judgment that a violation is considered to have occurred is to be one that will be made at the NSC level."²⁹⁷ The clear message was that evidence of violations was very politically sensitive and Kissinger didn't want to hear about them.

In 1977, Melvin Laird, who was secretary of defense during the Nixon administration's SALT I negotiation, stated, "The evidence is incontrovertible that the Soviet Union has repeatedly and indeed contemptuously violated the [SALT I] Treaty to which we have adhered."²⁹⁸ Retired Admiral Elmo Zumwalt, the chief of naval operations during the SALT negotiation, also maintained that the Russians were cheating.²⁹⁹

Compliance issues were addressed seriously for the first time when President Reagan stated in a December 1985 report to the Congress,

The Administration's most recent studies support its conclusion that there is a pattern of Soviet noncompliance. As documented in this and earlier reports, the Soviet Union has violated its legal commitments to the SALT I ABM Treaty and Interim Agreement, the

Limited Test Ban Treaty of 1963, the Biological and Toxin Weapons Convention, the Geneva Protocol on Chemical Weapons, and the Helsinki Final Act. In addition, the U.S.S.R. has likely violated provisions of the Threshold Test Ban Treaty.³⁰⁰

The main conclusions of the Reagan administration's reports on Soviet noncompliance were later confirmed by senior Soviet/Russian officials. For example, on October 23 1989, then-Soviet Foreign Minister Eduard Shevardnadze conceded that the Krasnoyarsk radar was "a violation, an open violation of that [the ABM] Treaty."³⁰¹ Just after the demise of the Soviet Union, then-President Boris Yeltsin admitted that the Soviets had an illegal biological weapons program.³⁰²

Sven Kraemer's 1990 article on "The Krasnoyarsk Saga" is still well worth reading to understand the conflicts that exist in the interagency process. Dr. Kraemer records that early in the Reagan administration, "new interagency efforts to assess Soviet violations of the SALT II agreement were blocked by the Department of State during 1981..."³⁰³ Kraemer wrote that there were "delaying tactics and resistance within the government bureaucracy, especially in the State Department, ACDA and parts of CIA." During the same period, the State Department conjured up what Dr. Kraemer called the "Al Capone" approach to compliance assessment. Under this approach Capone "would be [in] 'net compliance' with the U.S. tax code as long as he adhered to a majority of its detailed provisions, even while violating others." As President Ronald Reagan affirmed in 1982, "Simply collecting agreements will not bring peace. Agreements genuinely reinforce peace only when they are kept. Otherwise, we are building a paper castle that will be blown away by the winds of war."³⁰⁴ In strategic nuclear arms control, particularly at very low warhead levels, the consequences could be the nuclear winds of war.

Topol—Five Generations of Russian Arms Control Violations

The Topol missile saga illustrates how the Soviets/Russians ignore inconvenient arms control provisions when they interfere with their strategic nuclear agenda. The Topol missile in its various incarnations violated SALT II, the INF Treaty and the START for 30 years.

As discussed in Chapter II, because of its relevance to the assessment of the New START verification regime for mobile ICBMs, the 1979 SALT II prohibition on the deployment of the Soviet SS-16 mobile ICBM began a chain of Soviet/Russian violations that continued until the demise of the START Treaty in 2009.

The Soviet SS-25 (Topol) was the follow-on to the SALT II-prohibited SS-16. As then-Under Secretary of Defense Fred Iklé said in a letter to Senator Pete Wilson (R-CA), the SS-25 was "a derivative of the SS-16." The Soviets could not call it a modified SS-16 because that missile was prohibited by the SALT II Treaty. Moreover, they could not call it a "new type" of ICBM. This would have resulted in a violation of SALT II because SALT II limited the Russians to one "new type" of ICBM, which Russia had previously declared as its new SS-24 ICBM. Russia dealt with this problem by declaring it to be a modified version of the older SS-13 ICBM, despite the fact that the SS-13 and SS-16 were products of different design bureaus.³⁰⁵ The Reagan administration found the SS-25 to be a violation of the SALT II Treaty because it was clearly a prohibited "second new type" of ICBM. President Reagan stated, "The SS-25, a clear and irreversible violation of the Soviet Union's SALT II commitments, also has important political and military implications...Under the guise of permitted modernization, the Soviets...have deployed

a prohibited second new type of missile, the SS-25, which is a mobile [ICBM] and could be made more lethal.”³⁰⁶

The accuracy of the Reagan administration’s assessment was proven by the START Treaty Memorandum of Understanding (MOU), which indicated that the SS-25 exceeded the permissible change to the SS-13 allowed under SALT II. Both the launch weight and throw-weight of the SS-25 were required to be within five percent of that of the SS-13 to avoid a Treaty violation. The Soviets stated that the throw-weight of the SS-13 was 600-kg while the SS-25’s was 1,000-kg. The Soviets also declared that the launch weight of the SS-13 was 51 tons and that of the SS-25 to be 45.1 tons—almost double the variation allowed.³⁰⁷

The next missile to be called the Topol, the SS-27 ICBM, was deployed in 1997. As its designator indicates, the missile was a new type of ICBM, but the Russians continued the myth that it was another modification of the 1960s-vintage SS-13. They gave the missile the designator RS-12M Variant 2 (i.e., SS-13 Variant 2) and generally called it the Topol M Variant 2.³⁰⁸

Strangely, the missile was literally born in violation of the INF Treaty because the Votkinsk plant was then subject to the monitoring provisions of the INF Treaty. The Clinton administration’s 1995 arms control compliance report stated, “...on December 25, 1993, Russian officials exhibited what Russia declared to be a training model of the RS-12 M Variant 2 ICBM for silo launcher (the Russian designation for the follow-on to the SS-25 ICBM) [which the United States now calls the SS-27.] Second on July 18, 1994, a rail car exited Votkinsk which contained an empty, canister-like cylinder. The United States concluded that these exits failed to comply with several provisions of the INF Treaty.”³⁰⁹

In October 1994, an exchange of conformed letters³¹⁰ between the ambassadors to the INF Treaty Special Verification Commission recorded an agreement would be concluded for “selective imaging of the first and second stages of the missile [that] Russia has declared as the RS-12M, Variant 2 for silo launcher.”³¹¹ It was agreed that “the United States as a matter of policy will direct its inspectors at Votkinsk not to exercise the U.S. right to image the contents of the launch canister of up to five missiles.” The State Department compliance report in 1998 revealed that during “SVC-XX [the INF Treaty compliance commission session number 20], in November 1997, the Parties concluded a package of documents related to longer-term inspection procedures for new Russian missiles exiting the missile production plant at Votkinsk. These new missiles included the ‘Start’ Space Launch Vehicle (SLV), the ‘Start-1’ SLV, and the SS-27 ICBM for both silo and road-mobile launcher. These documents, and the procedures they codify, have allowed the United States to continue exercising its Treaty inspection rights for these new missiles, including the use of non-damaging CargoScan© imaging, at the Votkinsk portal.”³¹²

Unfortunately this was not the whole story. In fact, the Russians were actually rewarded for their violation of the INF Treaty—to avoid a diplomatic dispute, the United States curtailed its own verification rights. Under the INF Treaty, the United States had the right to “image the content of any launch canister” exiting the Votkinsk production facility; in response to the Russian violation of INF Treaty verification procedures, this right was limited to “selective imaging.”³¹³

Another example of Soviet/Russian noncompliance involves missile flight testing. Under the START Treaty, it was not legally possible to test an ICBM or SLBM with more warheads than were originally attributed to it. Since the SS-27 (RS-12 Variant 2) was attributed with one warhead under the START Treaty, the SS-27 could not be MIRVed. In 2007, Putin's Russia tested a MIRVed version of its SS-27 ICBM, despite the fact that the START Treaty prohibited testing or deployment of more than one warhead on this type of missile. In an attempt at obfuscation, Russia changed the designator of this missile from the RS-12M Variant 2 to the "RS-24." Pavel Felgengauer noted it was a SS-27 (Topol M) "rebranded."³¹⁴ Yuriy Solomonov, who then headed the design bureau which built the SS-27, admitted that the RS-24 was a MIRVed SS-27.³¹⁵ Lieutenant General Sergei Karakayev, commander of the Strategic Missile Forces, said, "The mobile missile system with the RS-24 ballistic missile is an improved version of the Topol-M..."³¹⁶ A September 2008 report by then-Secretary of Defense Robert Gates and then-Secretary of Energy Samuel Bodman revealed that there was "a new SS-27 derivative with a Multiple Independently-targetable Re-entry Vehicle (MIRV) payload [which] the Russians call the RS-24."³¹⁷

This was apparently not the only violation of the START Treaty relating to the MIRVed SS-27 Mod 2/RS-24. Colonel General (ret.) Viktor Yesin has stated that the throw-weight of this missile is 1,400-kg.³¹⁸ Since the SS-27 was originally declared to be a variant of the SS-13, the maximum permissible throw-weight for the missile is 1,210-kg because only a 21 percent increase in throw-weight was permissible.

The deployment of the MIRVed SS-27 will increase the number of warheads on the Russian ICBM force by a factor of three to six in the short term and Russia may also deploy a 10-warhead version of this missile.³¹⁹ Indeed, by the end of 10-year duration of the New START Treaty, the largest segment of Russia warheads will be on missiles that violated START. Since this type of missile is now listed as an "existing type" of missile in the New START Treaty, no penalty was imposed on Russia for its Treaty violation.

Russian Violations Relating to Heavy ICBMs

The effort to constrain heavy ICBMs dates to the first strategic arms control agreement, the 1972 SALT I interim agreement, which supposedly limited the number of these missiles to 308. Then-National Security Advisor Henry Kissinger said at a June 15, 1972 White House briefing on SALT I that there were "safeguards" in the agreement which included "the safeguard that no missile larger than the heaviest light missile [the SS-11] that now exists can be substituted."³²⁰ This was simply not the case. Chief negotiator Gerard Smith was more candid with the Congress, but even he exaggerated: "We have put them [the Soviets] on clear notice that any missile having a volume significantly larger than their SS-11" would be considered "as incompatible with the Interim Agreement."³²¹ Such seemingly assured statements were short lived.

During the SALT I negotiation, the Soviets refused to agree to a definition of a "heavy ICBM." The United States defined "heavy ICBM" in a unilateral statement which had no impact on Soviet policy. Admiral Elmo Zumwalt, chief of naval operations during the SALT negotiation, later wrote that the Joint Chiefs of Staff received "the strongest kind of assurances" from President Richard Nixon and Kissinger that the Russians would be held to this interpretation of the agreement.³²²

This did not happen and, as a result, there was literally a massive expansion in Soviet strategic offensive forces. As Senator Henry “Scoop” Jackson (D-WA) stated during the SALT I ratification hearings, “If the SS-11 [the largest Russian “light” ICBM in 1972] can be replaced by a missile 50% greater in volume, Soviet throw-weight is not being held in place.”³²³ This is what happened when the Russians replaced hundreds of SS-11 with even heavier SS-19 ICBMs. The throw-weight increase was actually 3.5 times per missile.³²⁴

In his quasi-official history of SALT I, written largely as a response to the classic critique of SALT by William Van Cleave, who participated in the SALT negotiation, John Newhouse was given access to the classified negotiating record. He wrote, “any violation of the spirit of this language, let alone its letter, would probably oblige the United States to withdraw from the agreements. Moscow understands this.”³²⁵ What Moscow was actually doing at the time, according to Van Cleave, was displaying “a certain disdain toward U.S. SALT expectations,” as well as continuing to probe “what the United States will accept and where it will attempt to stand firm.”³²⁶

When it became known that the SS-19 violated the U.S. unilateral statement (the volume increase was about 60 percent), Kissinger changed his tune: “I think it is at least open to question whether the United States can hold the Soviet Union responsible for its own statements when the Soviet Union has asserted that it does not accept this interpretation.”³²⁷ Indeed, the Carter administration ignored this transgression and gave the Soviets a clean bill of health on the SS-19 in a 1978 “compliance” report.

In 1985, former Under Secretary of State William Schneider observed that as a result of the SS-19 deployment, “Today, that Soviet force of SS-19 ICBMs is armed with over 2,000 strategic nuclear warheads of considerable yield. Each of these 360 missiles is roughly the size of the future U.S. MX [Peacekeeper] ICBM. Even the somewhat smaller Soviet SS-17 may be ‘heavy’ under the U.S. definition which was issued in 1972 as a unilateral statement.”³²⁸ He also noted that, “The United States not only acquiesced *ex post facto* in the SS-19 deployments but legitimized them in SALT II.” The Soviets were not held accountable for their actions.

Patrick Glynn, soon after he left the Arms Control and Disarmament Agency (he was special assistant to the director), wrote, “...the Soviets have tested what appears to be yet a third new type—their planned replacement for the SS-18 missile.”³²⁹ There is other evidence to corroborate Glynn’s assertion. In May 1985, then-Assistant Secretary of Defense Richard Perle wrote, “We also know that the Soviets have other new ICBMs under development and these, too, could violate the qualitative restrictions of the SALT II Treaty on throw weight...”³³⁰ Then-Secretary of Defense Casper Weinberger noted in the preface to the 1987 edition of *Soviet Military Power*, “the follow-on missile to the SS-18 Mod 4 ICBM...will probably have greater throw-weight, carry at least 10 warheads, and have greater accuracy than its predecessor...”³³¹ The SALT II Treaty prohibited any new type of heavy ICBMs.

Russian sources now establish that the SS-18 Mod 5 was a violation of SALT II. The SS-18 Mod 5 throw-weight was increased far more than the permissible five-percent increase allowed in the SALT II Treaty. According to a history of the Russian ICBM program, the SS-18 Mod 5 has throw-weight of 8,800 kg. It also said that the SS-18 Mod 4, which was the largest version of the SS-18 that existed when SALT II was signed in 1979, had a throw-weight of only 7,300 kg.³³² As was the case with the SS-19—a violation that was later legitimized in SALT II—the

follow-on Russian heavy ICBM, the SS-18 Mod 5, was a violation that was subsequently legitimized in START.

In 1998, Senator Jesse Helms, then-chairman of the Senate Foreign Relations Committee, wrote that, "Russia is clearly violating the START Treaty in a manner strongly suggesting that they have deployed several hundred more warheads than allowed" under START.³³³ There is simply no doubt that Russia disregarded its legal obligation under START to eliminate at least 22 launchers for the SS-18 heavy ICBM each year until the final START level of 154 launchers was achieved. This violation did not appear in the Clinton administration's compliance reports although it is documented in Russia's own START MOU data which show a reduction of only 6 launchers from January 1996 to July 1999.³³⁴ As a result of the SS-18 START violation, Russia retained for several years 28 extra heavy ICBMs, each armed with 10 nuclear warheads.

Russian Violations of the Presidential Nuclear Initiatives

In 1991 and 1992, Soviet President Mikhail Gorbachev and Russian President Boris Yeltsin, respectively, pledged to reduce Russian tactical nuclear weapons in a number of specified ways. There has long been a concern in the West that Russia was not acting consistently with these commitments. The U.S. commitments made by President George H.W. Bush went beyond what the Russians pledged and were implemented in full. Then-Secretary of Defense Dick Cheney and General Colin Powell, then-chairman of the Joint Chiefs of Staff, announced that the U.S. would eliminate 1,300 nuclear artillery shells and 850 Lance short-range ballistic missile nuclear warheads. President Bush asked the Soviet Union to eliminate its nuclear artillery, nuclear air defense missiles and nuclear landmines.³³⁵ He also announced that under "normal circumstances, our ships will not carry tactical nuclear weapons" and asked the Soviet Union to do the same. Cheney and Powell said that 500 U.S. tactical nuclear weapons would be removed from submarines and surface ships and that 50 percent of them would be destroyed.³³⁶ General Powell also stated that all land-based naval nuclear depth bombs would be destroyed. Actual U.S. reductions went well beyond those announced. As a result of decisions made in the Nuclear Posture Reviews of 1994 and 2010, the United States eliminated all of its naval tactical nuclear weapons.

The Presidential Nuclear Initiatives (PNIs) are significant for future arms control because they are mainly related to constraining tactical nuclear weapons, which the Obama administration has established as a major objective of the post-New START negotiation. The PNI commitments were reciprocal but not completely parallel. They are important because they constitute the only experience with tactical nuclear arms control, which is much more difficult than strategic nuclear arms control.

In 1991, President Mikhail Gorbachev announced that the Soviet Union would, on the basis of reciprocity: 1) eliminate all its nuclear artillery and nuclear warheads for tactical missiles; 2) withdraw nuclear warheads for surface-to-air missiles from the troops; 3) eliminate a portion of the nuclear warheads for surface-to-air missiles; 4) eliminate all nuclear land mines; 5) call for the elimination of all naval nuclear weapons; and 6) withdraw all tactical nuclear bombs from airfields and put them into central storage. President Gorbachev also announced that, "All tactical nuclear weapons will be taken from surface ships and multiple purpose submarines. These weapons, as well as nuclear weapons on naval aircraft based on land will be stored in central storage facilities and a portion will be eliminated."³³⁷

In 1992, Russian President Boris Yeltsin went beyond Gorbachev's commitments announcing that: 1) "production of the existing types of sea-based long-range nuclear cruise missiles is ceasing [and] new types of such missiles will not be created"; 2) production has been stopped of nuclear warheads for land-based tactical missiles... nuclear artillery shells and nuclear mines [and] stocks of such nuclear devices will be eliminated"; and 3) "Russia is eliminating one third of sea-based tactical nuclear weapons and one half of [its] nuclear warheads for anti-aircraft missiles."³³⁸

On October 7, 2004, then-Assistant Secretary of State Stephen Rademaker voiced Washington's concern that Russia "has not fully met its commitments to reduce tactical nuclear weapons in Europe."³³⁹ Russian tactical nuclear forces were dramatically reduced after the demise of the Soviet Union. Russia had no choice because of the cost of maintaining the Soviet arsenal and because it could not use the entire Soviet nuclear inventory due to the much smaller size of the Russian armed forces. Russia has continued to maintain a Cold War type of tactical nuclear arsenal, including the type of weapons it agreed to eliminate completely—battlefield nuclear weapons. Moreover, Russia has not kept its commitment to refrain from deploying tactical nuclear weapons on naval vessels.

Retention of Battlefield Nuclear Weapons

Contrary to the Soviet PNI pledge, there is overwhelming evidence that the Russians have retained battlefield nuclear weapons, i.e., nuclear artillery, short-range ballistic missiles and land mines. In November 2003, almost four years after Russia claimed to have eliminated battlefield nuclear weapons, Colonel General Vladimir Zaritskiy, then-commander of the Artillery and Missile Troops, stated that if a decision is made to use tactical nuclear weapons, the Missile and Artillery Troops will carry it out and are trained to do so. He confirmed the continued existence of these nuclear weapons in Russia's arsenal.³⁴⁰ In another interview in November 2003, he said that missile and artillery weapons were the "primary means" for the Missile Troops and Artillery Troops to employ tactical nuclear weapons and these will play the "decisive role" in contemporary warfare.³⁴¹

In 2004, Ambassador Anatoloy Antonov admitted Russia did not completely eliminate the Army's nuclear warheads for land-based tactical missiles, nuclear artillery shells and nuclear mines, although he attributed this to technical and financial limitations. In 2005, the Russian defense ministry issued a fact sheet about the Russian Army, which stated, "*The Missile Troops and artillery are a combat arm of the Ground Troops. They are the main means for fire and nuclear strikes against an enemy*" (emphasis added).³⁴²

In May 2007, General Zaritskiy wrote an article about the Artillery and Missile Troops in which he quoted a Russian field manual as documenting the continued role of battlefield nuclear weapons. He wrote that the basic guidelines for the "Concept for the Use of Tactical Nuclear Weapons" and the "Concept of Effective Engagement," were both developed in the late 1990s and codified in legal documents that were issued in 2004.³⁴³

Numerous credible reports confirm Russia's continued reliance on battlefield nuclear weapons. In April 2009, Colonel General (ret.) Viktor Yesin confirmed the continued existence of tactical nuclear missile warheads in the Russian inventory.³⁴⁴ Former Deputy Chairman of the Duma Defense Committee Alexei Arbatov indicated tactical warheads can be delivered by air force, artillery and by the navy.³⁴⁵ In September 2007, journalist Nikolay Poroskov reported that

Russia's nuclear arsenal includes tactical ground-based missiles, air-defense weapons, naval anti-ship and ASW missiles, artillery projectiles, nuclear mines, aerial bombs, and air-to-surface missiles. According to Poroskov, it is variously estimated that there are 3,500 to 4,000 nuclear weapons of the types, among which are about 1,200 warheads for missiles and 1,500 munitions of various classes.³⁴⁶ There are also Russian and Western press reports concerning the Russian retention of the "nuclear suitcase bombs" or atomic demolition munitions.³⁴⁷ Arbatov also said the nuclear weapons of Ground Troops' artillery, tactical missiles and mines were "partially destroyed."³⁴⁸

In May 1999, it was reported in the Russian press that President Yeltsin had authorized a nuclear warhead for the new short-range ballistic missile called the Iskander. *RIA Novosti*, the well-known Russian military journalist Dmitriy Litovkin, retired Major General Vladimir Belous, Alexei Arbatov and retired Colonel General Viktor Yesin all confirmed that the Iskander is nuclear capable.³⁴⁹ In 2006, the Russian nuclear weapons laboratory at Sarov published a document on its accomplishments, including the specific nuclear weapons it had designed. The publication stated the, "Tactical BM [ballistic missile] 'Iskander' is equipped with a special nuclear warhead developed at our institute."³⁵⁰ ITAR-TASS and other Russian publications have reported that then-First Deputy Minister of Defense Vladimir Popovkin confirmed that the Iskander can carry conventional or nuclear weapons.³⁵¹

Additional evidence of Russian retention of battlefield weapons is their simulated use in Russian military exercises. There were multiple reports in the Russian press about the use of low-yield tactical nuclear weapons in the Vostok 2010 exercise. The official newspaper of the Far East Military District reported, "To suppress a large center of the separatists' resistance and to achieve minimal losses of the attacking troops a low-yield 'nuclear' attack was mounted against the enemy."³⁵² The Russian newspaper *Suvorovskiy Natisk* said that the Vostok 2010 Russian military exercise concluded with a simulated low-yield nuclear strike.³⁵³ Russian journalist Oleg Falichev reports that the detonation of a nuclear mine was simulated in the concluding phase of the exercise.³⁵⁴

The fact that Russia has retained battlefield nuclear weapons is so well known in that country that *RIA Novosti* actually equates the U.S. proposal to negotiate about tactical nuclear weapons as a proposal for negotiations about battlefield nuclear weapons: "When ratifying the new strategic arms reduction treaty with Moscow in December 2010, the U.S. Senate adopted a resolution obligating the government to start bilateral talks on cutting the TNW stockpiles—landmines, artillery shells and short-range missiles. Washington says Moscow has a larger number of these systems."³⁵⁵

The United States has no battlefield nuclear weapons because it has fulfilled its PNI obligations. To comply with its PNI pledges, the United States has dismantled more than 3,000 tactical nuclear weapons.

Failure to Put Tactical Nuclear Weapons into Central Storage

According to Colonel General Vladimir Verkhovtsev, then-commander to the 12th Main Directorate of the General Staff, the Russian nuclear weapons organization, "In speaking of quantitative and qualitative figures of the RF nuclear weapon inventory, I can only confirm the fact that deployed groups of forces, both strategic as well as general-purpose, are fully supplied with nuclear weapons."³⁵⁶ There is substantial evidence that this is the case.

Claims by Moscow that it has put its tactical nuclear weapons into central storage in Russia proper are suspect. Some Russian weapons have likely been placed into central storage, but large numbers apparently have not. Writing in *The Washington Post* in January 2001, Walter Pincus reported that, "Over the past year, Russia has been putting tactical nuclear warheads into storage facilities at a naval base in Kaliningrad, a Russian enclave on the Baltic Sea between Poland and Lithuania, senior U.S. officials said yesterday."³⁵⁷ Retired Russian Major General Vladamir Belous has confirmed the presence of nuclear weapons in Kaliningrad.³⁵⁸ More recently Swedish Foreign Minister Carl Bildt, Polish Foreign Minister Radoslaw (Radek) Sikorski and Lithuanian Defense Minister Rasa Jukneichienė have all stated that Russia has nuclear weapons in Kaliningrad.³⁵⁹

According to Warsaw's *Nowe Panstwo* (Internet version), Russia has many types of tactical nuclear weapons in Kaliningrad including nuclear artillery, weapons for Su-24 and Su-27 aircraft and anti-ship missiles.³⁶⁰

The Obama administration's 2010 NPR states, "Russia maintains a much larger force of non-strategic nuclear weapons, *a significant number of which are deployed near the territories of several North Atlantic Treaty Organization (NATO) countries*" (emphasis added).³⁶¹

Deployment of Nuclear Weapons on Multipurpose Submarines

The Russian defense ministry apparently routinely deploys naval tactical nuclear weapons on naval vessels other than ballistic missile submarines, which is inconsistent with the Russian PNI commitment. In 2005, it stated:

The main strike force of the Navy consists of nuclear-powered submarines, armed with ballistic and *cruise missiles with nuclear warheads*. Those ships are *constantly patrolling various regions of the oceans of the world and ready for the immediate use of their strategic weapons* (emphasis added).³⁶²

During a Russian nuclear exercise in 2006, in a televised meeting between then-President Vladimir Putin and then-Defense Minister Sergei Ivanov, Ivanov revealed that Russia was deploying tactical nuclear weapons on three multipurpose (attack) submarines. Pavel Felgengauer summarized the discussion and its implications:

On Sunday September 10, during a meeting with Russian President Vladimir Putin aboard the Baltic Fleet's flagship, the destroyer *Nastoychivy*, at the naval base Baltiysk, Kaliningrad, Defense Minister Sergei Ivanov made public that Russia has apparently abrogated a major nuclear arms control agreement....Then came the real sensation: Putin asked how many Russian nuclear subs were at sea. Ivanov reported: "Today, there are eight nuclear-powered submarines at sea on combat patrols. Five of them are strategic and three are multipurpose, but each of them has nuclear arms aboard" (Interfax, September 10).³⁶³

Felgengauer also noted the significance of this: "Now Putin himself has personally 'finished off' the agreement on reciprocal voluntary nuclear disarmament." Felgengauer was, of course, referring to Russia's apparently defunct PNI obligations.

Additional evidence of routine deployment of nuclear weapons came to light in the aftermath of the August 2000 sinking of the Russian guided-missile submarine "Kursk." Russian Duma

Deputy Grigoriy Tomchin, a member of the Russian government commission investigating the Kursk accident, when asked if the Russian submarine was carrying nuclear weapons replied, "Everyone knows that."³⁶⁴ Tomchin eventually backed away from his statement claiming he had been misquoted.³⁶⁵ However, this was clearly not the case. Tomchin had made similar statements several times and the motives for his subsequent recantation are obvious.

Norwegian "TV2" also quoted a Norwegian representative of a company preparing an operation to raise the Kursk as saying he had seen Russian documents marked "secret" which indicated that there were "two atomic missiles" onboard.³⁶⁶ This was based on a statement by Harald Ramfjord, a scientist of the Norwegian company Global Tool Management, which will take part in raising the Kursk this fall. According to the report, Ramfjord:

confirmed Tomchinsky's statement. According to him [Ramfjord], when he studied technical documents given by the Russian Navy he saw a secret document according to which the Kursk carried two cruise missiles with nuclear warheads. Each of these cruise missiles has explosive potential equivalent to 34 of the type of nuclear bomb that exploded at Hiroshima. Russia assured Norway that the Kursk did not have nuclear weapons. The first official report was sent by the Navy to Norway three days after the disaster. Moscow continued to conceal the fact that the Kursk was equipped with nuclear missiles.³⁶⁷

Pavel Felgengauer wrote: "A Norwegian naval officer told this correspondent last April that Norwegian divers who had worked on the Kursk carried indicators which signified the presence of nuclear warheads on the submarine."³⁶⁸ He attributes the decision to lift the Kursk to the presence of nuclear weapons on the submarine.

Additional evidence that Tomchin's assertion was true was provided about a decade later when Igor Kananykhin, first deputy general director of the Center for Operating Ground-Based Space Infrastructure Facilities, in an interview with the Russian defense ministry newspaper, revealed that officials at the center were justifiably proud that the task of salvaging of missiles from the Kursk submarine was entrusted to their specialists and that they extracted all 27 missiles from the submarine.³⁶⁹ The recovered weapons were taken to Novaya Zemlya. Novaya Zemlya is a remote nuclear weapons test site. This is exactly what would have been done if there had been a concern about nuclear weapons safety in regard to submerged nuclear weapons. It makes no sense for the recovered conventional weapons to be taken to Novaya Zemlya. Moreover, scientists from the Technical Security Systems Scientific Research Center of the 12th Central Scientific Research Institute, the Russian nuclear weapons organization, were placed in charge of assessing the Kursk's weapons.³⁷⁰

Russian Development of New Nuclear SLCMs

The new Russian 5,000-km range nuclear submarine-launched cruise missile, which has been repeatedly reported by *RIA Novosti*, would be inconsistent with President Yeltsin's pledge not to build new types of such missiles. In 2003, journalist Sergey Sokut wrote that the reason for the emphasis on submarines was, "...on a submarine unlike a surface vessel, it is possible to conceal tactical nuclear weapons, which according to a Russian-U.S. agreement should not be carried in peacetime."³⁷¹

Continued Construction of Blackjack Bombers

As part of his Presidential Nuclear Initiative, President Boris Yeltsin announced that Russia would terminate the production of the Blackjack bomber. After Putin assumed the presidency, production was resumed. As noted in Moscow's *Kommersant-Vlast*, small-scale production of Tu-160 bombers was restarted, and the last Tu-160 was delivered in 2008.³⁷² Production of the Tu-160 continues, with each bomber taking three years to produce.

Reported Russian Violations of the INF Treaty

Russia has repeatedly threatened to withdraw from the INF Treaty. As Russian expert Stephen Blank has pointed out, "In March 2005 Sergei Ivanov [the defense minister] raised the question of withdrawal from the INF Treaty with the Pentagon. More recently, Ivanov has stated that the INF Treaty was a mistake. And since then [Chief of the General Staff] Baluyevskiy followed suit, threatening to pull out of the treaty unless Washington decreased its missile defense plans."³⁷³ In February 2007, Major General Vladimir Vasilenko, head of the 4th Central Research and Development Institute of the Russian defense ministry, stated that deploying ground-based medium range missiles may be a means of assuring national security.³⁷⁴

Major General Midykhat Petrovich Vildanov, a professor at the Academy of Military Sciences, called for developing "pragmatic approaches" to the observance of the INF Treaty in support of Russia's national security.³⁷⁵ Pragmatism should play no role in treaty interpretation, at least if it is done on a legal basis.

Russian Reports that Iskander R-500 Missile Range Exceeds the INF Treaty Limit

The INF Treaty prohibits ballistic or cruise missiles with a range of 500-5,500 km. Russian military expert Alexander Golts has pointed out that from time to time, Russian leaders and military officials hint that the Iskander missile can fly further than 500 km.³⁷⁶ To violate the INF Treaty, a cruise missile does not have to fly beyond 500 km, but merely have the range potential to do so. However, a ballistic missile has to demonstrate that it can fly more than 500 km to violate the INF Treaty.

The R-500 ground-launched cruise missile was regarded as so important that it was the subject of a televised conversation between then-President Putin and then-Defense Minister Ivanov.³⁷⁷ Perhaps the reason is that the R-500 missile restores some Soviet capabilities eliminated by the INF Treaty. According to *RIA Novosti*, "The flight range of a new cruise missile adapted for Iskander and successfully tested in May 2007 could exceed 500 km (310 miles)."³⁷⁸ Russian arms control expert Viktor Myasnikov reports that the R-500 on its first test exceeded the limit of the INF Treaty and its range can be expanded to 1,000 kilometers.³⁷⁹ Russian journalist Oleg Vladykin states that the R-500 cruise missile range will "presumably increase to 1,000 km or more."³⁸⁰ Mikhail Barabanov, chief editor of the *Moscow Defense Brief*, wrote that the R-500 could fly "to more than 1,000 km," and that, "The R-500 missile is actually a conventional version of the Soviet 3M10 (RK-55) long-range cruise missile, which was the analogue of the U.S. Tomahawk cruise missile. The 3M10, is installed as the Granat (SS-N-21) system with a range of up to 2,600 km on the Russian Navy's nuclear-powered attack submarines and was previously deployed as the Relief (SSC-4) ground-based long-range mobile cruise missile system, eliminated by the 1987 INF Treaty" (emphasis added).³⁸¹ Yury Fedorov, associate fellow, Russia and Eurasia Programme, Chatham House, also links the R-500 to the Soviet

CSS-X-4 Slingshot cruise missile that was destroyed in accordance with the INF Treaty and noted there “are reports that it could have a range of up to 2,000 km.”³⁸² *Kommersant* also said that the range of the R-500 can be 1,000 kilometers.³⁸³ Sergei Bermasov writing in *Pravda.ru* reports, “However, earlier NATO experts expressed their concerns about the fact that Russia actually has violated the Treaty, since the alleged modification of the Iskander-K allows firing cruise missiles P-500 [sic], capable of striking targets at a distance of 2,000 kilometers.”³⁸⁴

RIA Novosti’s military commentator Ilya Kramnik stated that the Iskander system “can also launch long-range cruise missiles—R-500s have already been test-fired from the Iskander. Potentially, the range of a cruise-missile system can exceed 2,000 kilometers, making it possible to hit targets across Western Europe.”³⁸⁵ He noted that this was a violation of the INF Treaty. In January 2009, he again stated that: “Iskander can be equipped with cruise missiles with a range of up to 2,000 km (1,243 miles), and even 3,000 km (1,865 miles) that will allow it to destroy targets anywhere in Western Europe.”³⁸⁶

All of these individuals are well-known Russian journalists who are recognized as military and arms control experts. The number of reports and the caliber of the journalists and experts reporting these actions suggest that the stories are true. If true, it would mean that the R-500 violates the INF Treaty to a degree that would be a material breach of the Treaty. The INF Treaty range definition for a cruise missile is not demonstrated range but maximum theoretical range. It reads, “The range capability of a GLCM [ground launched cruise missile] not listed in Article III of this Treaty shall be considered to be the maximum distance which can be covered by the missile in its standard design mode flying until fuel exhaustion, determined by projecting its flight path onto the earth’s sphere from the point of launch to the point of impact.”³⁸⁷

The ballistic version of the Iskander also has the potential to violate the INF Treaty but there are no reports that this has occurred. According to Ivan Konovalov and Vladislav Litovchenko, each launcher accommodates two solid-propellant ballistic missiles with a range to 500 km and with different types of warheads—cluster, penetrating, fragmentation-high explosive, or nuclear.³⁸⁸ When Colonel General Zaritskiy was asked if Russia could eventually raise Iskander’s range to over 500 km, which is banned by the INF Treaty, Zaritsky said, “Who knows what the motherland may order?”³⁸⁹ He also stated that if it was decided to pull out of the agreement, Russia would immediately enhance the capabilities of the system, including its range. This statement implies it already has the range potential to exceed 500 km. Finnish journalist Markku Salomaa wrote the Iskander could have a range of over 500 kilometers, and even 700 kilometers with nuclear weapons, which are relatively light-weight compared with conventional warheads.³⁹⁰

Russian Use of Missile Defense and Surface-to-Air Missiles as Ballistic Missiles

Pavel Felgengauer has revealed that the S-300, the S-400, the S-500 and the Moscow ABM interceptors can be “dual-use as conventional or nuclear medium or shorter-range ballistic missiles.”³⁹¹ He also said such a capability was demonstrated during the Vostok 2010 exercise. If true, this would not only represent a violation or circumvention of the Presidential Nuclear Initiatives of 1991-1992, but also constitute a legal violation of the INF Treaty. Felgengauer has called this a covert violation of the INF Treaty.

The INF Treaty range definition captures all INF-range missiles that fly a ballistic trajectory, not merely missiles that are designed to attack ground targets. Missile defense interceptors and

surface-to-air missiles generally fly a ballistic trajectory. Since the intent was not to cover them, the INF Treaty contains an exception allowing for missile and air defense interceptors but it only applies if the missiles are used “solely” for that purpose. If the missiles have a surface-to-surface offensive capability, the question of whether the Russians are already in violation of the INF Treaty depends upon the testing history of the S-300 and S-400. There would also have to be a determination as to whether or not the missiles would be classified as cruise or ballistic missiles, since the ranges for these missile are measured in different ways. However, it would be virtually impossible for the S-500, with its intercept range of 600 km, not to violate the INF Treaty if used in a surface-to-surface role. Moreover, the longer-range Moscow ABM interceptors would be a clear violation of the INF Treaty if they have a surface-to-surface capability.

Russian Violations of the START Verification Provisions Regarding Telemetry

Russian violations of START verification provisions were discussed in Chapter II because of their relevance in assessing the New START verification regime. As in the case with the substantive violations of strategic arms control agreements, there are patterns of Russian violations with respect to the verification provisions. The Russians have, for example, consistently violated mobile ICBM verification provisions related to the confirmation of type of missiles deployed.

With regard to telemetry, the Reagan administration concluded that, “Soviet encryption practices constitute a violation of a legal obligation [under SALT II] prior to 1981 and a violation of their political commitment subsequent to 1981. The nature and extent of encryption of telemetry on new ballistic missiles is an example of deliberate impeding of verification of compliance in violation of this Soviet political commitment.”³⁹² President George H.W. Bush, in his last compliance report to the Congress, stated, “The United States considers that the encryption of telemetry on the December 20, 1991 flight test of a SS-19 ICBM constituted a violation of the Soviet Union’s political commitment not to encrypt telemetry or use jamming on flight tests of ICBMs after November 29, 1991.”³⁹³

In the 2005 Bush administration’s compliance report it was revealed that, “Russia has in some instances failed to comply with Treaty requirements regarding the provision of telemetry information on missile flight testing pursuant to Article X of the START Treaty and Sections I and II of the Telemetry Protocol.”³⁹⁴ When asked by a senator about what were the “most common” Russian violations of the START Treaty, the Obama administration listed telemetry as number two.³⁹⁵ Telemetry was one of the most important elements of the START verification regime. It was linked to the verification of restrictions on launch-weight, throw-weight and number of warheads carried or tested.

Russian Violations of Nuclear Testing Constraints

There are two nuclear testing treaties legally in force: the 1963 Limited Test Ban Treaty (LTBT) and the 1974 Threshold Test Ban Treaty (TTBT). In addition, the Soviet Union announced a moratorium on nuclear testing in 1990 and claims to have continued it to the present. Since 1996, Russia has been subject to the legal obligation “not to defeat the object and purpose” of the Comprehensive Test Ban Treaty (CTBT). The LTBT prohibits testing in the atmosphere, the oceans and outer space. The TTBT prohibits nuclear tests of over 150 kilotons but also

requires notification and certain verification procedures relating to lower yield tests. The CTBT prohibits all nuclear testing but does not define what constitutes a nuclear test.

The issue of Russian nuclear testing was addressed in the report of the bipartisan Congressional Commission on the Strategic Posture of the United States. Those commission members opposing the CTBT pointed out, “Apparently Russia and possibly China are conducting low yield tests.”³⁹⁶ Supporters of the CTBT on the Commission did not challenge this conclusion, although they argued that the value of covert testing was overstated. The government of India reportedly is reportedly far less sanguine, taking the reports of Russian and Chinese nuclear testing quite seriously.³⁹⁷

Soviet Violations of Nuclear Testing Treaties

President Reagan’s December 1985 report on Soviet noncompliance revealed that, “...the Soviet Union has violated...*the Limited Test Ban Treaty of 1963...In addition, the U.S.S.R. has likely violated provisions of the Threshold Test Ban Treaty*” (emphasis added).³⁹⁸

The Soviet nuclear test compliance record is poor. Soviet violations of the 1963 Limited Test Ban Treaty dated back to 1965, involving “numerous” ventings of radiation from underground nuclear tests for which the evidence was unequivocal.³⁹⁹ A September 2001 Russian study of nuclear testing confirmed that almost all Soviet tests vented nuclear debris.⁴⁰⁰ The demise of the Soviet Union provided even more substantial proof that this was the case. A December 1999 Japanese and Kazakhstani study of the tests at Semipalatinsk concluded, “Some underground explosions near the ground surface were equal to surface explosions from a viewpoint of the radioactivity release to the environment.”⁴⁰¹

Regarding the Threshold Test Ban Treaty’s 150-kiloton testing limitation, likely Soviet violations began in 1976, and were “numerous,” according to President Reagan. (Congressional sources reported 16 such tests by 1985.⁴⁰²) Tests had yields, according to Harold Agnew, former director of the Los Alamos National Laboratory, which “appeared to us to range as high as 400 kilotons, based on the detection criteria in effect at the time of the initial agreement.”⁴⁰³ The ACDA General Advisory Committee report on Soviet arms control compliance judged that the evidence “strongly suggests” Soviet TTBT violations.⁴⁰⁴

Verification Difficulties and Russian Nuclear Testing Violations

The evidence of Russian violations of nuclear testing constraints has to be put in the context of the extreme difficulty of obtaining this type of information. There is no credible argument that technical means of verification can detect all nuclear tests. The inability to verify a zero-yield CTBT was one of the key issues in the Senate debate that defeated the CTBT in the 1990s. In October 1999, *The New York Times* reported, “In a new assessment of its capabilities, the Central Intelligence Agency has concluded that it cannot monitor low-level nuclear tests by Russia precisely enough to ensure compliance with the Comprehensive Test Ban Treaty...”⁴⁰⁵ The CIA briefing, which reportedly dealt with actual covert Russian nuclear tests, apparently impacted the outcome of the Senate’s 1999 vote rejecting the CTBT.

During the CTBT ratification hearings, then-Sandia National Laboratory (SNL) Director Paul Robinson stated, “The treaty bans any ‘nuclear explosion,’ but unfortunately, compliance with a strict zero-yield requirement is unverifiable.”⁴⁰⁶ Robinson was concerned that, “The treaty’s

zero-yield limitation on nuclear explosions could introduce some asymmetries between the United States and other parties to the treaty,” pointing specifically to hydronuclear tests in which “chemical-explosive-driven nuclear chain reactions... go super-critical” and which could not be detected. His bottom line was, “If the United States scrupulously restricts itself to zero yield while other nations may conduct experiments up to the threshold of international detectability, we will be at an intolerable disadvantage. I would advise against accepting limitations that permit such asymmetry.”

Hydronuclear tests deliberately release nuclear energy. The 1963 Limited Test Ban Treaty prohibits atmospheric nuclear tests, with no exclusion for very low-yield nuclear tests; and the Threshold Test Ban Treaty requires notification of all underground nuclear tests.

The Soviets conducted nuclear tests in the atmosphere until 1989, despite the Limited Test Ban Treaty. According to a report by the Russian nuclear weapons design laboratory at Sarov, that there were “89 [hydronuclear tests] including air, surface and underground (tunnel) experiments,” which involved “a mock-up of a nuclear device with no considerable nuclear energy release (its value did not exceed that characteristic for a high explosive).”⁴⁰⁷ In another publication, Atomic Energy Minister Viktor Mikhaylov stated that, “The nuclear energy release during *most* of these experiments was less than 100 kg of chemical explosive equivalent” (emphasis added).⁴⁰⁸ The Russians apparently went public on this because their highly contaminated nuclear test range now belonged to Kazakhstan and hence evidence there was difficult to hide. In addition, Mikhaylov appears to have sought to legitimize such testing under the CTBT. Russia’s description of the yield of these tests was deliberately ambiguous, which could suggest much higher yields for some of them, as does the fact that the first two of these “hydronuclear tests” in 1958 were air burst. This strongly suggests low-yield testing rather than hydronuclear testing because of the instrumentation limitations of the 1950s.

According to the Russian Ministry of Atomic Energy (MINATOM) report cited above, Russia conducted atmospheric hydronuclear tests a few days before and after the signing of the Limited Nuclear Test Ban Treaty. It conducted an additional 28 atmospheric tests in the years through 1989, and these tests “played an important role in the analysis of the safety and *reliability of nuclear weapons*” (emphasis added). Significantly, this constitutes a violation of the Limited Test Ban Treaty and does not suggest inordinate Russian fear of the risk of detection. Despite being unclassified, this issue was not treated in the 1998 Clinton administration’s noncompliance report to the Congress.

In short, the United States either *did not detect large numbers of very low yield Soviet atmospheric nuclear tests or ignored them*, despite the fact that such tests are a clear violation of the Limited Test Ban Treaty. The Soviet/Russian record of noncompliance seems is at odds with the narrative of those pushing for greater arms control.

Covert Russian Nuclear Tests Under the Moratorium and After CTBT Signature

The Russian press is the main source of information about nuclear testing activities in post-Soviet Russia. A book by Russian nuclear weapons designers, including V.A. Logachev, revealed in 2000 that, “Since 1994, numerous additional hydrodynamic and *hydronuclear experiments* have been successfully carried out at NZTS [Novaya Zemlya Test Site].”⁴⁰⁹ On April 23, 1999, then-First Deputy Atomic Energy Minister Viktor Mikhaylov stated that Russia would conduct “so-called test-site hydronuclear experiments, where there is practically no

release of nuclear energy,” and on April 29, 1999 he stated that, “developed traditional nuclear powers can use hydronuclear experiments to perform tasks of improving reliability of their nuclear arsenal and effectively steward its operation.”⁴¹⁰ The Russian press also reported that President Boris Yeltsin’s April 29, 1999 decree on nuclear weapons development approved “hydronuclear field experiments.”⁴¹¹ In July 2001, Mikhaylov again stated that, “...the developed, traditional nuclear powers, using hydronuclear experiments, can perform the task of improving reliability of the nuclear arsenal and effectively track its operation while reducing the risk of possible accident.”⁴¹²

A second source of information about Russian nuclear testing activities is provided by numerous declassified, but heavily redacted, Clinton-era CIA reports which discussed Russian hydronuclear testing and Russian nuclear warhead development. One of these CIA reports stated that, “Authorities including First Deputy Minister for Atomic Energy Mikhaylov have said Russia is looking at a range of techniques—including hydronuclear experiments—that they say would allow them to continue warhead design and maintenance research within the limits of the Comprehensive Test Ban Treaty.”⁴¹³ Another declassified CIA report said that hydronuclear experiments “are far more useful for Russian weapons development” than subcritical tests.⁴¹⁴ The CIA is not likely to have written long reports on non-existent issues.

Writing in *The New York Times* in March 2001, William J. Broad and Patrick E. Tyler reported, “Some [in the intelligence community] have concluded that Russia is lying and is instead detonating small nuclear blasts,” but that the “State Department is skeptical of the accusation and has written formal rebuttals....The intelligence team that says Russia is lying includes Lawrence Turnbull, a Central Intelligence Agency analyst, and Charles Craft, a Sandia National Laboratory analyst...”⁴¹⁵ Reportedly, Congress had been briefed on Russian preparations for nuclear testing.⁴¹⁶

When Deputy Prime Minister Sergei Ivanov visited Novaya Zemlya in July 2006, he declared he came because President Putin had “set a concrete task of improving Russia’s nuclear arsenal.”⁴¹⁷ Russia continues to maintain 4,000 personnel at Novaya Zemlya despite its extreme climatic conditions. Why? *Subcritical* tests can be conducted almost anywhere, including above ground in containment vessels. The scope of the Russian commitment to Novaya Zemlya suggests *far more than subcritical testing*, as did Viktor Mikhaylov’s hard-line opposition to mutual transparency at test sites and open support of hydronuclear testing. The activity at Novaya Zemlya could well be related to low-yield, decoupled nuclear tests.

In January 1999, Lev Ryabev, then-head of the atomic energy ministry’s Nuclear Munitions Development and Testing Department, said that their so-called “subcritical” tests can produce a nuclear yield (i.e., 0.1 gram).⁴¹⁸ (According to Richard Garwin, “The negotiating history makes clear that in banning nuclear explosions the [CTBT] treaty permits *no yield* from nuclear explosions—not 1 kiloton, not 1 kilogram, not 1 milligram of yield, but zero yield.”⁴¹⁹) In 2006, the 0.1 gram yield number again appeared in a Russian press report on “subcritical” nuclear testing at Novaya Zemlya.⁴²⁰ This is inconsistent with U.S. practice and it implies that either Moscow does not regard the CTBT or its testing moratorium as “zero yield,” or it does not care. Minister Mikhaylov wanted other Russian agencies kept out of the approval process for nuclear experiments. This is understandable in light of the probable nuclear yield of Russian tests in the context of a “zero yield” CTBT. The former head of MINATOM admits that Russia does not report tests with a one ton-yield as nuclear tests.⁴²¹

With the decline of freedom in Putin's Russia, the discussion of Russian nuclear testing has diminished. However, in November 2010, Alexei Fenenko of the Russian National Academy of Scientists wrote, "Over the past 15 years, significant progress has been made in subcritical and hydronuclear testing."⁴²² Major General (ret.) Vladimir Belous revealed that in 1994-1995 a series of hydronuclear tests with a total yield of 10 kilograms of TNT was performed at the Novaya Zemlya test site.⁴²³

What It All Means

The Soviet Union and its successor state Russia have consistently violated their arms control treaty obligations and formal pledges since the beginning of modern arms control in 1972. When compared to the Soviet era, the main difference today is that Russia has fewer resources with which to cheat. Most of the strategic weapons Russia has today violate its legal obligations, political commitments or U.S. interpretation of previous agreements. This includes the SS-18 mod 5, the SS-25, and the MIRVed version of the SS-27 missiles. The same will likely be obvious when the New START Treaty expires in 2021 (or 2026 if it is extended). The nuclear warheads on the Russian missiles apparently will have been tested in contravention of a declared nuclear test moratorium and Russia's legal obligations concerning the CTBT. There is almost never any consequence for these violations. These violations have clear military significance, and they should have an impact upon how arms control is viewed. Regrettably, they do not. The evidence is more often suppressed than provided to the American people. This "see the evil, take no action" approach to arms control has done a great disservice to the safety and security of the American people.

Chapter V

Russian Nuclear Modernization

Neither the 2010 Nuclear Posture Review nor the Obama administration's presentations on New START to the U.S. Senate discussed in any detail the Russian nuclear modernization programs. The subject is not discussed in the annual statements by the secretary of defense to the Congress. Little information is provided by the intelligence community's unclassified annual threat assessments. The Russians, however, released more information about their modernization programs in 2011 than they did during the preceding five years. Understanding where the Russians are going in nuclear arms will be important for policy formulation concerning post-New START arms control.

During the Duma ratification hearings on New START, Defense Minister Anatoliy Serdyukov repeatedly stated that Russia was currently below the New START limits on both deployed nuclear warheads and delivery vehicles but intended to build up to them.⁴²⁴ On June 1, 2011 the State Department, based upon the Russian New START data declaration, confirmed that Russia was below both the limit of 1,550 deployed warheads and 700 deployed delivery vehicles; Russia declared 1,537 and 521, respectively. As previously noted, Russia's first New START data update in October 2011 showed it had *increased* its forces by 29 warheads to a level slightly *above* the New START limit of 1,550.

The Senate Foreign Relations Committee's Republican minority report on New START warned, "Russia will easily have well over 2,000 real—as opposed to accountable—deployed strategic nuclear warheads and thousands of tactical nuclear warheads."⁴²⁵ Former Vice Chairman of the Duma Defense Committee Alexei Arbatov agrees. In the words of Arbatov, "It is essentially a treaty on limiting the American strategic forces."⁴²⁶

Before the New START negotiation, Russia's announced strategic weapons modernization program involved the deployment of about 130 single-warhead and MIRVed SS-27 (Topol-M and RS-24) ICBMs, the new KH-102 nuclear air-launched cruise missile on its bombers and eight new missile submarines carrying the new Bulava-30 SLBM. Russia was also developing a new strategic bomber with some stealth capability, likely to be available in 2025-2030. The Soviet legacy SS-N-23/Sineva SLBM was also modernized, including precision accuracy. The new missiles all were modern post-Cold War designs, although the production rates were low. After the ratification of New START, Russia announced a large nuclear force buildup.

In 2011, Russia revived the ultimate symbol of Cold War nuclear confrontation, the heavy ICBM. As noted in Chapter 1, Russia announced that it will develop by 2018 a new heavy liquid-propellant ICBM to replace the existing SS-18 heavy ICBM. In July 2011, *Izvestia* reported that the new heavy ICBM will deliver up to 15 medium or 10 heavy nuclear warheads at a range of over 10,000 km. According to Colonel General (ret.) Viktor Yesin, "This will be a new, fifth-generation intercontinental ballistic missile, and not a clone of the 'Voyevod' [SS-18] ICBM."⁴²⁷ He continued that Russia will "profoundly modernize silos of heavy intercontinental ballistic missiles and...achieve a totally new level of fortifications involving means of passive and active protection from missile strikes."

In December 2011, Commander of the Strategic Missile Forces, Lieutenant General Sergey Karakayev, revealed “work is already under way to develop a missile system with a medium-class missile, with a new type of combat payload, in order towards the end of 2015 to begin to re-equip one of the missile divisions with this missile system.”⁴²⁸ The announced availability date suggests it is to replace the existing SS-19 missiles, which reportedly will go out of service in 2017 (with the probable exception of about 30 never-fueled missiles obtained from Ukraine). In addition to nuclear warheads, General Karakayev also said that the new medium-sized ICBM will be capable of carrying conventional warheads. This implies at least near-precision accuracy.

In March of this year Russia’s main ICBM producer announced a planned 40 percent production increase for that year.⁴²⁹ Defense Minister Anatoly Serdyukov said that Russia would buy 36 strategic ballistic missiles, two strategic missile submarines and 20 strategic cruise missiles.⁴³⁰ (In November 2011, the Russian defense ministry signed contracts for both a Borey nuclear ballistic missile submarine and a Yassen-class nuclear-armed cruise missile submarine.⁴³¹) Then-Prime Minister Vladimir Putin added that, “In 2013, missile production is expected to increase twofold.”⁴³² He continued, “...the [New] START treaty allows us to modernize offensive arms and make sure their efficiency does not decrease.”⁴³³ In February 2012, Putin wrote: “In the upcoming decade, Russia will deploy more than 400 advanced ground and sea-based intercontinental ballistic missiles...”⁴³⁴ In May 2011, Lieutenant General Sergei Karakayev said, “Fifth-generation ICBMs will make up at least 80% of the RVSN’s [the Strategic Missile Force] missile arsenals by the beginning of 2018.”⁴³⁵ In July 2011, Russian Defense Minister Anatoly Serdyukov stated that production of strategic missiles will increase threefold between 2011 and 2015 and mentioned a new strategic missile called the “Avangard.”⁴³⁶ At this point the characteristics of this missile have not been made known, although there is one report that it is a rail-mobile ICBM and it may be a modified RS-24, which was unsuccessfully tested in September 2011, and ITAR-TASS says that it could carry six warheads and missile defense countermeasures.⁴³⁷

An official Russian news agency, *RIA Novosti*, reported that, “Russia’s proposed fifth-generation nuclear submarines will be armed with both ballistic and cruise missiles.”⁴³⁸ Duma leader Andrei Kokoshin confirmed this program.⁴³⁹

In May 2011, Russia reportedly tested an “in-depth modernization” of the Sineva SLBM, which reportedly carries eight ZG-32 warheads of a low-yield class along with missile defense countermeasures or four new medium-class warheads.⁴⁴⁰ A press release issued by the manufacturer of the Liner SLBM stated that the missile can carry 9 to 12 small warheads or four medium warheads or a combination of both.⁴⁴¹ The missile is being put into production and will be deployed on legacy Delta submarines.

In June 2011, Russia announced that the Bulava-30 would be operational this year on two submarines.⁴⁴² Pavel Felgengauer reports that Russia plans to have eight of the new Borey-class submarines by 2017 and that they may be modified to increase the number of missile launchers from 16 to 20.⁴⁴³

Yuriy Solomonov, the chief designer of Russia’s solid-fuel ICBMs, has stated that Russia will also develop a silo-based version of the MIRVed SS-27.⁴⁴⁴ Solomonov has also said that the single-warhead and MIRVed versions of the SS-27 will get new warheads by 2016. Both versions of the SS-27 carried new warheads when they became operational in 1997 and 2010,

respectively.⁴⁴⁵ In 2016, the oldest of the MIRVed SS-27 warheads will be six-years old. There is no doubt that the purpose of the new Russian warheads is not sustainment but rather enhancement of military capability. It is unknown exactly what the Russians are planning, but it may be to MIRV the single-warhead SS-27, to deploy the 10-warhead package on the MIRVed SS-27, or to deploy a new multiple-warhead system that does not use a MIRV dispensing “bus” but rather employs “individual means of delivery to destination.”⁴⁴⁶ Such a system might increase the number of warheads any given missile can carry. It also could potentially increase accuracy.

In March 2011, Minister Popovkin revealed that the new Russian bomber:

...must be multifunctional. Its distinguishing features are supersonic cruising speed, large radius of action, large combat payload, reduced (low) signature, and capability of effective actions using PGM to destroy both airborne as well as ground targets. The RF [Russian Federation] Defense Ministry formulated these requirements for industry and they are being studied within the scope of an ongoing preliminary design.⁴⁴⁷

Under the announced Russian strategic weapons modernization program, the decline in Russian nuclear forces resulting from the retirement of aging legacy Soviet missiles will apparently be reversed in 2016. These forces will increase to meet the New START warhead limit by 2018 and the new Russian heavy ICBM will create a potential for 3,000 warheads on all strategic systems. Russia typically follows through on its plans for nuclear force modernization, although it generally takes longer than the announced schedule. Recently the Russians have demonstrated improved efficiency, deploying the new MIRV SS-27 only a few months after its announced date.

This short summary may not be the entire Russian program for the next twenty years. While the Russians have not discussed much about their programs between 2020 and 2030, nuclear forces will likely continue to be Russia’s highest priority. There are many loopholes in the New START Treaty that the Russians could exploit to their advantage.

Russian Tactical Nuclear Weapons

The Russians talk less about their tactical nuclear weapons than they do about their strategic systems. In fact, they refuse to disclose their numbers of these weapons. According to Principal Deputy Under Secretary of Defense James Miller, “Unclassified estimates suggest that Russia has 4,000 to 6,500 total nuclear weapons, of which 2,000 to 4,000 are non-strategic tactical nuclear weapons.”⁴⁴⁸ In comparison, according to National Security Council arms control director Gary Samore, there are only a “few hundred” U.S. tactical nuclear weapons in the U.S. arsenal.⁴⁴⁹

Dr. Miller’s estimate and the frequently noted estimate of 3,800 Russian non-strategic nuclear weapons are far from the highest number in the public domain. General (ret.) Viktor Yesin has urged the Russian government to declassify the number of Russian tactical nuclear weapons, stating that estimates around the world ranged from “several tens of thousands to 4,000-4,500.”⁴⁵⁰ Amy Woolf of the Congressional Research Service quotes experts as saying Russia has between 2000-6000 tactical nuclear weapons.⁴⁵¹ According to ITAR-TASS, Russia probably has “in the range of 15,000 to 17,000 total [nuclear] warheads.”⁴⁵²

During the early phase of the START negotiation, Vice Admiral Oleg Burtsev, then-First Deputy Chief, Main Naval Staff, stated, “Probably, tactical nuclear weapons [on submarines] will play a key role in the future,” since their “range and precision are gradually increasing” and, “We can install low-yield warheads on existing cruise missiles.”⁴⁵³

As noted in Chapter I, *RIA Novosti* reports that Russia plans a class of multipurpose submarines carrying long-range cruise missiles (up to 3,100 miles or 5,000 km), with conventional or nuclear warheads, and which can effectively engage submarines, surface warships, and land-based targets.

Russia is now producing new Su-34 nuclear-capable, long-range fighter bombers.⁴⁵⁴ In March 2011, the Su-34 flew 8,000-km with air-to-air refueling. Principal Deputy Defense Minister Vladimir Popovkin also announced that ten nuclear-capable Iskander brigades are to be procured by 2020. Up to 120 systems will be purchased.⁴⁵⁵ The ratio between nuclear- and conventionally-armed Iskander missiles has not been revealed.

What It All Means

Unlike the United States, Russia has a broad-based nuclear force modernization program underway and it is enhancing its military capacities rather than simply sustaining them. New START is having no impact on Russian nuclear force modernization and Russia has decided to increase its forces to the New START levels. Actual force levels could be higher than the notional New START limits on warheads and delivery vehicles because so many things do not count under New START and bomber weapons are discounted.

Chapter VI

Post-New START Nuclear Arms Control

The Obama agenda for the next round of nuclear arms control negotiations was reaffirmed by Assistant Secretary of Defense Rose Gottemoeller on July 1, 2011: “We look forward to pursuing further limits on and reductions in nuclear arms in consultation with our NATO Allies. When President Obama signed the New START Treaty he said ‘the United States intends to pursue with Russia additional and broader reductions in our strategic and non-strategic nuclear weapons, including non-deployed nuclear weapons.’”⁴⁵⁶ However, Russia has repeatedly made clear that it does not intend to negotiate reductions on tactical nuclear weapons any time soon.

Rhetoric aside, it is not at all clear that the Obama administration is serious about negotiating a post-New START agreement. In stark contrast to its rush to obtain the New START Treaty, the Obama administration is not pressing for an early negotiation on its post-New START agenda. At least this is the perception in Russia. As cited earlier, Sergey Karaganov’s observation appears valid: “For the time being, in order not to lose what has been achieved, the White House...refrained from pushing for the beginning of negotiations on reducing nonstrategic or tactical nuclear weapons in Europe, in which Russia is many times superior in terms of numbers. This is why Moscow does not want these negotiations.”

There is no question that there is a need for intense preparations for a new negotiation on the Obama agenda. Moreover, before any follow-on arms control negotiation takes place, particularly one focused on tactical nuclear weapons, there should be resolution of the issues raised by credible Russian journalists about Russian ground-launched cruise missile programs which, if the reports are true, are clear violations of the INF Treaty. Reported Russian behavior with regard to the INF Treaty is similar to behavior by the Soviet Union with regard to the Biological Weapons Convention, which the Soviets blatantly violated. This is far more significant than Russian violations of political commitments regarding tactical nuclear weapons under the Presidential Nuclear Initiatives.

Russia will not accept the Obama administration’s post-New START agenda voluntarily. In light of the Russian position, a replay of the Obama administration’s approach to the New START negotiation will fail. If the United States wants an agreement on tactical nuclear weapons it will require intense pressure on Russia. Even a more realistic version of the Obama administration’s attempt to trade reductions in the tactical nuclear warheads for reductions in U.S. strategic delivery vehicles will likely fail. Russia cares more about retaining its nuclear capabilities than it does about negotiated nuclear arms reductions. Meanwhile, senior U.S. administration officials are discussing making unilateral reductions in U.S. nuclear forces, while at the same time trying to get Russia to agree to a negotiation that Russia does not desire. These actions are counterproductive. While the Russians wanted to reduce U.S. deployed delivery vehicles to 500 in New START, they are highly satisfied with the New START outcome.

Russian opposition to tactical nuclear weapon arms control is very strong. While, as detailed in Chapter IV, President Boris Yeltsin made political commitments relating to tactical nuclear weapons reductions, these were never completely honored. Currently, Russia has a massive

advantage in tactical nuclear weapons and does not want to change this. Writing in 2005, Russian arms control expert Viktor Myasnikov noted, "Russia has rejected US proposals for control over tactical nuclear weapons at least three times."⁴⁵⁷

Early negotiations on tactical nuclear weapons were twice rejected by Russian Foreign Minister Sergei Lavrov during the Duma New START ratification proceedings. When asked about a new negotiation on tactical nuclear weapons, Minister Lavrov told the Duma, "Our absolute priority is the implementation of the treaty [which is] being debated today. Our other priorities include a need to understand how the situation will unfold around the missile defense shield, how issues of conventional weapons are tackled in Europe, and certainly whether or not the problem of preventing the deployment of any weapons in space is resolved."⁴⁵⁸ After Duma approval of New START, Deputy Russian Foreign Minister Sergei Ryabkov stated in response to a question about tactical nuclear weapons, "We are not even close to discussing the prospect of concluding any agreement in this sphere, the more so as we don't know yet how the [new] ratified arms reduction treaty will be implemented....Until we see the way commitments undertaken within its framework are fulfilled and to what extent the sides are acting in line with the treaty's letter and spirit, this issue will be premature for us."⁴⁵⁹ According to Vladimir Putin in February 2012, "We cannot continue with disarmament infinitely against a backdrop where some other nuclear powers arm themselves. Out of the question."⁴⁶⁰

Russia continues to link future discussions of tactical nuclear weapons to the withdrawal of U.S. tactical nuclear weapons from NATO Europe, which is their only policy objective with regard to tactical nuclear weapons. In effect, what the Russians are saying is "give us everything we want in the negotiation before the negotiation starts." Thus the United States faces multiple, difficult and even unacceptable preconditions for tactical nuclear weapons arms control.

Russian views concerning nuclear weapons and their utility are extreme and unlikely to change anytime soon. When asked about tactical nuclear weapons during his 2012 Presidential election campaign, Putin declared "we are not going to give up any of the things that we need... As for what we need and does not burden us, but on the contrary, offers certain guarantees, we are not going to give it up."⁴⁶¹

To achieve the Obama administration's arms control agenda, it must be pursued in an adversarial fashion and the Russians must face an alternative outcome that is unpalatable to them. Unlike the situation during the START and INF negotiations, there are no plans for real modernization of U.S. nuclear forces for the next 20 years. The threat to Russia posed by U.S. nuclear forces is not increasing. At best the United States is merely sustaining the capabilities it had long ago and, in reality, it is allowing its capabilities to erode. To achieve the announced Obama arms control agenda, the United States must change the Russian perception of the alternative they will face if they continue their current positions on arms control.

Changing the Russian position on tactical nuclear weapons arms control will not result from any feasible agreement on missile defense. It could take a significant U.S. action much like the deployment of intermediate-range missiles in Europe during the 1980s to change Russian views about the desirability of tactical nuclear weapons arms control. U.S. missile deployments resulted in the INF Treaty because the Soviets feared them and were willing to pay a price to eliminate them.

Anything that creates the perception in Moscow that the United States will take action to deny that Russians nuclear parity if they do not accept the U.S. arms control agenda will enormously increase U.S. leverage with Russia in a post-New START arms control negotiation. A Russian perception of a U.S. commitment to arms control as an end in itself will have the opposite impact.

One of the most effective pressure points by which to motivate Russian interest in tactical nuclear arms control would be to create, to the extent possible, an ongoing U.S. deployment program that included the forward deployment of nuclear-capable aircraft within range of Russia. This is similar to the type of threat that Russia often makes in relation to planned U.S. missile defense deployments.

Obama Administration Policy on Tactical Nuclear Weapons Arms Control

Obama administration objectives with regard to tactical nuclear weapons arms control appear modest and possibly not really arms control. The most detailed statements by Obama administration officials speak about “transparency” rather than “arms control.” According to NSC official Gary Samore, “We would be prepared to exchange with Russia information about numbers, types, and locations of U.S. tactical weapons if they were prepared to do the same about Russian tactical nuclear weapons. The next step is monitoring and verification, and that will require some very creative means—both technical and on-site verification.”⁴⁶² Conspicuously omitted is any reference to the reduction in non-strategic nuclear weapons which the Russians vigorously oppose. “Transparency” and “verification” will not eliminate a single Russian tactical nuclear weapon.

The Obama administration appears to be simply going through the motions of talking about tactical nuclear weapons so that it can claim that it is meeting the condition set in the New START Resolution of Ratification. The resolution mandates negotiations on tactical nuclear weapons and periodic reports to the Congress. Reductions in tactical nuclear weapons and verification do not seem to be very high on the Obama administration’s agenda. According to Samore, “I think ultimately, the two sides will have to talk about whether there are ways to allow access to storage facilities to verify that tactical nuclear weapons are not being removed.”⁴⁶³ Note this interesting formulation. Samore does not say “reduced,” but rather, “not being removed” from storage facilities. It seems that the administration is not thinking about any agreement that would reduce Russian tactical nuclear weapons. Samore apparently believes that Russian weapons are really in central storage. The problem with his “arms control” concept is that it will have no impact on Western security during periods of crisis or war, even if they were in central storage during peacetime, which apparently is not the case.

Irrespective of whether the U.S. agenda involves reductions or “transparency,” the Russians will oppose it. The Obama administration has reduced its leverage with the Russians on tactical nuclear weapons when it agreed to a one-sided New START Treaty. As Samore continued, “The U.S. has a very small number—only a few hundred tactical nuclear weapons—and we don’t really have a strong military reliance on them as far as European security goes. In contrast, the Russians have a much larger number—probably a few thousand nuclear weapons.” Why should the Russians agree to tactical nuclear weapons limitations? No apparent pressure is being placed on them to do so. Almost any conceivable agreement based upon equality and reducing Russia’s tactical nuclear weapons would have little effect on the

United States because of the asymmetry in our arsenals. The Russians are well aware that the Obama administration is committed to reducing U.S. nuclear capability, unilaterally if necessary.

In March 2011, then-Under Secretary of State Ellen Tauscher said that, “Moving missile defense from a negative to a positive factor in our relationship could facilitate cooperation in other areas as well, including talks on further reductions in strategic, non-strategic and non-deployed nuclear weapons. But reaching any agreement will not be easy and it will take time.”⁴⁶⁴ This approach to dealing with Russia on missile defense is failing and will hardly make it easier to achieve an agreement on tactical nuclear arms control. Russia continues to escalate its rhetorical attacks on European missile defense and is playing its traditional hand of nuclear threats against missile defense deployment in Europe. Even if one could wave a magic wand and obtain Russian agreement on missile defense cooperation, this development would not likely have any impact on Russian views concerning tactical nuclear weapons.

Verification of “Additional and Broader Reductions” in Strategic Offensive Arms

Assuming the Obama administration’s announced agenda of “additional and broader” reductions in strategic offensive arms means reducing the number of deployed warheads and delivery vehicles (a good bet), there are difficult verification issues which would need to be resolved. As then-Senator Christopher Bond (R-MO) observed, the United States cannot reliably verify the treaty’s 1,550 limit on deployed warheads and won’t be able to verify any new lower limit with New START’s verification provisions. Nor can the New START verification regime verify the limit of deployed delivery vehicles. The reasons for this are detailed in Chapter II and need not be repeated here in detail. In summary form, the New START Treaty is inadequate to verify the central limits of the Treaty because: 1) the Treaty did not deal with the START warhead inspection problems and, hence, did not create an effective regime for ballistic missile warhead inspections; 2) the near-complete elimination of the START telemetry regime will make it difficult to assess accurately the size of new Russian warheads if the Russians practice data denial in their missile testing, a problem which has the potential to negate the effectiveness of the warhead inspection regime; 3) the almost complete loss of the mobile ICBM monitoring regime will make it impossible to verify the size of the deployed mobile ICBM force; and 4) the reduction in the number of inspections and notifications combined with the elimination of short-notice inspections will make all types of inspections less effective. To deal with the risk posed by lower levels of nuclear weapons, there will clearly have to be enhancements to the New START verification regime.

The Obama administration has announced an agenda of limiting all types of non-deployed nuclear weapons. It is also noteworthy that in the New START negotiation the United States reportedly offered, and the Russians rejected, continuous monitoring at two U.S. nuclear weapons storage areas.⁴⁶⁵ Hence, New START will result in no experience in the problems associated with the counting of nuclear warheads in storage facilities, a key requirement for the administration’s agenda of limiting non-deployed nuclear warheads of all types and tactical nuclear weapons.

The issues relating to verifying lower limits on deployed strategic weapons and delivery vehicles are the same as those discussed in Chapter II. The only significant difference is that the benefits of cheating are multiplied at lower levels of warheads. The additional warheads that result from cheating allow for the coverage of additional targets and, therefore, greater coercive leverage. To make New START or a post-New START Treaty verifiable, it would be necessary

to return to something like the Clinton administration's concept of an expanded START Treaty verification regime rather than the Obama administration's degraded New START regime. However, even the original START regime, while better than that of New START, was not designed to deal with the threat posed by cheating on a relatively low level of deployed nuclear weapons and was not in any way designed to deal with tactical nuclear weapons. The following are some key changes necessary for the New START regime to be able to verify warhead and delivery reductions:

- modifying the ballistic missile warhead inspection regime by limiting the size of the warhead covers that can be used during inspections to avoid the possibility that the covers hide more than one warhead;
- returning to the START telemetry regime with enhanced exemptions for missile defense testing;
- restoring the START regime for the continuous monitoring of mobile ICBM production;
- restoration of major elements of the START Treaty's mobile ICBM verification regime;
- imposition of much more stringent requirements for the elimination of strategic offensive arms, particularly mobile ICBMs; and
- reviving numerous START Treaty qualitative limitations and prohibitions, including a ban on new types of heavy ICBMs or banning heavy ICBMs *in toto*.

The Verification of Tactical Nuclear Weapons Reductions

Tactical nuclear weapons are far more difficult to verify than any previous arms control unit of account. As previously noted, Alexei Arbatov listed the types of existing non-strategic nuclear weapons as including "short range missiles (up to 500 kilometers), artillery systems and nuclear mines (landmines) of the ground troops, air defense missiles, missiles and bombs (including depth charges) of the nonstrategic strike aviation of the Air Force and Naval Forces/Navy, and also various tactical air defense, anti-ship, and antisubmarine warfare missiles, and the torpedoes of surface combatants and attack submarines." This is a good description of the Russian force. The United States has only one remaining type of non-strategic nuclear weapon, the B-61 gravity bomb. The Russians retain nearly all of the wide array of types of tactical nuclear weapons the Soviets had during the Cold War, although at reduced numbers.

Major General (ret.) Vladimir Dvorkin, a very unusual Russian general, a man who actually supports unilateral Russian cuts in tactical nuclear weapons, has stated, "I think that an agreement regarding tactical nuclear weapons, as an agreement that requires control, is impossible in the [near term] and even maybe in the foreseeable future [b]ecause I cannot imagine control over non-strategic nuclear weapons."⁴⁶⁶ Alexei Arbatov has said that it is "virtually impossible to verify tactical weapons reduction. Whereas intercontinental missiles can be simply destroyed, it is not that easy to do likewise with dual-purpose delivery vehicles."⁴⁶⁷ Since the INF Treaty eliminated (except, of course, for the recent apparent Russian cheating) the dedicated nuclear missile delivery vehicles of medium- and intermediate-range missiles, and the remaining delivery systems for tactical nuclear weapons are dual purpose and cannot be eliminated, the focus must be on limiting the nuclear warheads themselves. Amy Woolf of the Congressional Research Service observed, "Negotiations on a treaty to limit nonstrategic nuclear weapons could be complex, difficult, and very time-consuming...In addition, the parties might find it difficult to devise and agree on a monitoring regime that would help them verify

compliance with a treaty that limited strategic, nonstrategic, and nondeployed nuclear warheads.”⁴⁶⁸

The “Gang of Four” (George P. Shultz, William J. Perry, Henry A. Kissinger and Sam Nunn), while advocating the most extreme form of nuclear arms control, don’t pretend to have a solution to the verification problem regarding the elimination of nuclear weapons. They simply assert that, “Progress must be made through a joint enterprise among nations, recognizing the need for greater cooperation, transparency and verification to create the global political environment for stability and enhanced mutual security.”⁴⁶⁹ This is probably wishful thinking. Any new verification regime for nuclear weapons must build on New START, the weakest verification regime since President Jimmy Carter’s SALT II Treaty.

The Verification Problem of “Nuclear Weapons” As a Unit of Account

Writing in 2010, Simon Saradzhyan, a fellow at Harvard’s Belfer Center for Science and International Affairs, observed that, “A verifiable NSNW [non-strategic nuclear weapons] agreement is difficult to develop and implement as tactical nuclear warheads are more compact and easier to relocate and conceal when compared to deployed strategic warheads. It would also be difficult to define and distinguish tactical and strategic nuclear weapons.”⁴⁷⁰ This is clearly correct but it is an understatement.

First, there is a definition problem. What is the difference between a “tactical nuclear weapon” and a “strategic nuclear weapon”? In many instances, it is nothing more than the intended use of the weapon. With regard to nuclear bombs, it not uncommon that a variant of the same type of nuclear bomb is used for both purposes. For example, there are strategic and tactical versions of the U.S. B-61 bomb. U.S. “strategic” air-launched cruise missiles and “non-strategic” sea-launched cruise missiles (scheduled for retirement) have used the same warhead.

Second, verifying limits on nuclear weapons, whether they are tactical nuclear weapons or non-deployed strategic nuclear weapons, means more than simply counting items declared to be nuclear weapons. Viewing and measuring is inadequate to determine if a weapon is nuclear, even if the new treaty had a provision requiring the demonstration of all existing types of nuclear weapons for photography and measurement. A cheater is simply not going to display all the nuclear weapons types in its arsenal.

Third, limiting numbers of nuclear weapons has little relevance as long as Russia retains the ability to produce 2,000 nuclear weapons per year.⁴⁷¹ To limit the number of tactical nuclear and non-deployed strategic nuclear weapons, it is necessary to reduce Russian production capability several fold and to locate covert production, storage and deployment facilities for nuclear weapons. Inspections at declared bases do not provide such information. In theory, national technical means of verification and other means of intelligence collection can provide such information. However, the historical record of our inability to detect covert Soviet programs related to the SS-23 short-range ballistic missiles and SS-16 ICBMs, as detailed in Chapter II, is not encouraging.

Fourth, even at bases declared to have nuclear weapons present, verification involves determining that items not declared to be nuclear weapons are actually not nuclear weapons. At best, this is extremely difficult, and in certain situations it would be impossible.

The basic verification procedures of all arms control verification regimes since the INF Treaty involve confirmation of declared information by viewing and measuring. Viewing and measuring will not tell an inspector whether something not declared to be a nuclear weapon is actually non-nuclear. To verify that an item declared not to be a nuclear weapon is actually not a nuclear weapon requires some type of non-intrusive technical means of verification that can make an objective determination. Objectivity is the key. However, in many cases, this will be impossible due to security concerns.

A standard typical nuclear weapon is either: 1) a fission weapon; 2) a boosted fission (which uses thermonuclear material to increase yield); or 3) a fission-fusion weapon. All of these types of nuclear weapons use fissile material and, hence, are detectable by either neutron detectors or gamma ray detectors under normal circumstances (i.e., the absence of shielding). However, there are nuclear weapons concepts that use very small amounts of fissile material, do not use any fissionable material or in which the fissionable material is not stored in the weapon until preparation for use.

Low-yield nuclear weapons may use very small amounts of fissile material if the objective is not to minimize the size and weight of the nuclear weapon. Smaller quantities of fissile material will make a weapon less detectable. If it were militarily useful to have massive conventional weapons (such as the U.S. Massive Ordnance Penetrator or its Russian counterpart), it would certainly be more useful militarily to have large nuclear weapons that are designed to minimize fissile material use. If this were to happen, such weapons could evade detection under an arms control agreement. In large weapons, lead might be used to reduce further the nuclear signature of the weapon. This is also possible in weapons that are much lighter than the Massive Ordnance Penetrator.

There are insertable capsule nuclear weapon concepts in which the fissile material is inserted only just before nuclear weapons use. Early nuclear weapons used this technique for safety reasons. Using more modern technology, as a 1992 report by the Congressional Office of Technology Assessment stated, it is possible to “design the conventional warhead in such a way that it could use ‘insertable nuclear components’...”⁴⁷² The report further stated that the insertable nuclear components “are small and their radioactive signature can be shielded; therefore, they would be difficult to find, even during an intrusive inspection.” This same technique could be applied to many types of tactical nuclear weapons. The fissile material—containing insertable component would not be a nuclear weapon under any reasonable definition of a “nuclear weapon,” but rather it would be a component of a nuclear weapon and, hence, not normally constrained by a treaty limiting nuclear weapons. It would be very small and easily shielded against detection with radiation detection equipment. To determine that an insertable capsule weapon without its fissile material present is actually a nuclear weapon, it would be necessary to either disassemble the weapon or subject it to radiography. Both of these intrusive alternatives would result in a highly subjective finding and neither of them has ever been used as a means of arms control verification nor do they have much plausibility for use in the future.

A major problem with making non-deployed nuclear weapons of any type a unit of account is that there are also, at least conceptually and perhaps in reality, pure fusion bombs. These are not detectable by neutron or gamma ray detectors because they do not use fissile material. Pure fusion weapons could have very low yields, and would essentially not produce fallout.

Because of neutron radiation and explosive force, the military effectiveness of these weapons would be very great compared to conventional weapons. Andre Gsponer and Jean-Pierre Hurni, of the Geneva-based Independent Scientific Research Institute, write that pure fusion weapons “could also be given high yields using a fission free nuclear weapon to compact non-fission triggers for large scale thermonuclear explosions.”⁴⁷³ According to Christopher Paine of the Natural Resources Defense Council, pure fusion weapons are “a Holy Grail of the [nuclear weapons] labs, to find a clean, low-yield, very compact nuclear explosive device.”⁴⁷⁴ The United States, but not Russia, has abandoned pure fusion weapons research. In 1998, the Department of Energy stated that “the U.S. does not have and is not developing a pure fusion weapon and no credible design for a pure fusion weapon resulted from the DOE investment.”⁴⁷⁵ Russia has apparently tested and developed new nuclear weapons since the end of the Cold War. With regard to anything that is nuclear, it should be remembered that in the United States for the last twenty years there has been little more than problem fixing and historical research aimed at supporting the concept of “stockpile stewardship.” During this time, Russia could have made major advances.

U.S. arms control enthusiasts, such the late Nobel Prize recipient and minimum deterrence advocate Hans Bethe, tend to argue that “success is unlikely” with pure fusion but at the same time he fears that, “There are always temptations in the laboratory,” and, “I want our country to go on the record that we really do not want further weapons developed.”⁴⁷⁶ Unfortunately, Bethe’s views are not very prevalent in Russia. At about the same time that Bethe articulated this view, former Atomic Energy Minister and then-Director of Science at the Sarov nuclear weapons laboratory, Viktor Mikhaylov, wrote, “We should also carefully approach the problem of developing low and superlow yield nuclear weapons and precision weapons with nuclear warheads. Such weapons can be realistically utilized in the event of large-scale military conflict involving the use of conventional arms or mass-destruction weapons when there is a threat to our country’s existence or worsening of the living conditions of our people,” and he predicted that this very advanced weapon would be developed within 10-20 years.⁴⁷⁷ He also stated, “Conventional high-precision weapons are no panacea here. Fourth-generation nuclear weapons will significantly surpass them in combat qualities.”

It is unknown whether the Russians have pure fusion weapons right now. Russia is known to have developed clean nuclear weapons. As early as 1962, as Radiy Ilkayev, science chief at the Sarov nuclear weapons laboratory, has revealed, thermonuclear fuel was burnt in a special module that contained no fissionable materials and was spatially separated from the nuclear explosion source.⁴⁷⁸

Yuriy A. Trutnev, the first deputy scientific director at the Sarov nuclear weapons design center, has stated that to reduce fallout, Russia had to significantly decrease the quantity of fission fragments in the primary of the nuclear weapon. A device of 100-kilotons was successfully protected and the yield potential was unlimited.⁴⁷⁹

In 1994, then-Atomic Energy Minister Viktor Mikhaylov stated that “a new generation of nuclear weapons could be developed by the year 2000...”⁴⁸⁰ In December 2002, he said that a “low-yield warhead will be surrounded with a superhardened casing which makes it possible to penetrate 30-40 meters into rock and destroy a buried target...”⁴⁸¹ In a March 2004 interview, Mikhaylov indicated that, “Thermonuclear weapons development philosophy has changed and

work is being conducted on the development of precision-guided munitions with penetrating capability.⁴⁸² In 2003, he mentioned fusion weapons with yields of several hundred tons.⁴⁸³

There are Russian press reports that Russia is developing, or has built, pure fusion weapons. In May 1999, retired Major-General Vladimir Belous wrote about Russian development of pure fusion weapons in which “a chemical explosion or magnetic field compression is used to implode a thermonuclear mixture” and stated that work was underway at Sarov (Arzamas-16) on such weapons.⁴⁸⁴ He also predicted that the “most likely collateral results of these experiments can be a significant increase in the energy-mass characteristics and creation of a neutron mini-bomb.”

Viktor Mikhaylov has pointed out that nuclear energy is not limited to fission and fusion and could include the energy from shifts in the magnetic moment of individual nucleons (neutrons and protons).⁴⁸⁵ When asked if weapons could be created on the basis of isomers (atoms in an excited state), Minister Mikhaylov stated that, “The energy of nuclear fission is 10 million times superior to chemical energy in terms of calorific value per unit volume or mass...Isomer transitions release energy only 1,000 times superior to chemical energy. It is hard to say whether such studies are under way today.” Ironically, the development of some type of super-powerful chemical explosive may result in a breakthrough in pure fusion weapons.

Uncertainties With Regard to the Russian Nuclear Stockpile

Uncertainties about the total size of the Russian nuclear stockpile considerably impact verification. (As noted in Chapter V, estimates of the number of Russian non-strategic nuclear weapons alone can vary by thousands.) It is clear beyond any shadow of a doubt that the margin of uncertainty on the total Russian nuclear stockpile is clearly adequate to destroy the United States as a functioning society.

The Small Size of Nuclear Warheads as a Verification Problem

Under START, the smallest accountable item that had to be monitored in Russia was an ICBM or SLBM. Russian ICBMs are about 20-30 meters long and 2-3 meters in diameter and weigh from several tens of tons to over 200 tons. Russian SLBMs are about 15 meters long and about two meters in diameter.⁴⁸⁶ By comparison, modern nuclear weapons are tiny and lightweight. The difference in size is one to two orders of magnitude. This has profound implications for verification of negotiated limits.

Nuclear warheads can be made extremely small. Anyone visiting the Smithsonian Aerospace Museum who views the SS-20 missile exhibition can get some appreciation of how difficult limiting nuclear weapons would be. Because of the unique design of the SS-20, the warheads on the top of the 15.5 meter missile are fully exposed. The SS-20 warhead appears to be less than a meter in diameter and less than two meters in length. The SS-20 is hardly a small nuclear warhead, and it is more than 30 years old.

The Defense Threat Reduction Agency (DTRA) has stated that Russian single-warhead SS-25 reentry vehicles “are right circular cones measuring about 0.67 to 1.0 meters in diameter at their base and about 1.7 to 1.9 meters in height.”⁴⁸⁷ DTRA also noted that the SS-25 could potentially carry MIRV warheads, which obviously would have to be even smaller.

The INF verification regime was designed to monitor the production of the SS-20 missile, not its warheads, although there was a requirement that the reentry vehicles of an SS-20 be eliminated to remove it from accountability. Much smaller strategic nuclear weapons now exist in Russia. Russian arms control expert Viktor Myasnikov says that Russia currently possesses, “a small weapon of 100 kilotons [which] weighs 100 kg” and there are a number of similar reports in the Russia press and American press.⁴⁸⁸ These claims appear to be consistent with the Bulava front section, which under START was declared by Russia to have six warheads but only 1,150 kilograms of throw-weight for both the warheads and the MIRV dispensing device.

If a nuclear warhead monitoring regime is to be created, the size of the smallest Russian nuclear warhead would set the size criteria for nuclear warhead inspections in Russia. This would have to be declared by Russia and verified by measurements. How big is the smallest Russian nuclear warhead? No answer with any certainty can be provided, although it is known that Russia has very small nuclear warheads. As far back as 1978, the Russians had introduced nuclear-capable artillery with a 152mm diameter.⁴⁸⁹ The Russians clearly continue to possess nuclear artillery (see Chapter III). Russian “backpack” nuclear mines developed during the Cold War have been described as weighing 30-50 kilograms.⁴⁹⁰

Twenty years have passed since the end of the development of new warheads in the United States, but Russia continues to develop them. On January 12, 2005, Russian Defense Minister Sergei Ivanov confirmed that, “New types of nuclear weapons are already emerging in Russia.”⁴⁹¹ In September 2009, Colonel-General Vladimir Nikolayevich Verkhovtsev, then-chief of the Russian Defense Ministry’s 12th Main Directorate, which handles nuclear weapons, stated that newly developed and produced Russian nuclear weapons possess improved specifications and performance characteristics and will be accepted into the inventory.⁴⁹² How much progress in size reduction has been made in the last twenty years? The Russians reportedly are developing and producing smaller and lighter nuclear weapons so they can arm the Bulava-30 SLBM with ten “super-lightweight” warheads.⁴⁹³

The extremely small size of nuclear warheads has a major impact on the functioning of any inspection or monitoring regime. The size of the inspectable object—which in this case would be the smallest Russian nuclear warhead—determines what areas inspectors would have access to during the inspections.

In the way arms control inspection regimes normally work, the diameter and length of the smallest nuclear warhead of the inspected party would set the size criteria for warhead inspections. This determines access not only to buildings but to containers. The size criteria would be somewhat less than the size of smallest declared nuclear warhead. Because of the extremely small size of nuclear warheads, inspections will have to be vastly more intrusive than any previous arms control agreement. If the Russians do not accurately declare the size of their smallest nuclear warhead, the verification regime will not work or it will take on the character of a Potemkin village. If the Russians were to declare their smallest nuclear warhead they would probably document their violation of the Presidential Nuclear Initiatives commitment with regard to nuclear artillery. As a result, they have every incentive to make a dishonest declaration.

The smallest inspectable item in any previous nuclear arms control treaty was the ground-launched nuclear cruise missile in the INF Treaty, which is the only previous arms control treaty which involved non-strategic nuclear delivery vehicles. Under the INF Treaty, any structure or container that is sufficiently large to contain a missile can be inspected, while smaller items

cannot be inspected. If applied to nuclear warheads, this restriction on access is meaningless, since essentially everything inside of an inspection area site diagram would be inspectable. Since the smallest nuclear warheads are much smaller than a human being, not only is anything that a human being can get into subject to inspection, but in all probability even safes in which classified material is stored would be subject to inspection. Thus, the intrusiveness of the regime would be far greater than that for any previous arms control treaty, and it would impact the United States roughly in the same fashion as Russia.

Elements of a Verification Regime for Nuclear Warheads

A verification regime for nuclear weapons would require two elements to be effective: 1) there would have to be continuous monitoring of nuclear warhead production; and 2) there would have to be inspections at operational bases and storage facilities so that nuclear warheads could be counted.

Continuous Monitoring of Nuclear Warhead Production

Monitoring the production of nuclear weapons must be a key element of the limitation of nuclear weapons. Continuous monitoring at missile production facilities was initially established in the INF Treaty. In the previous treaties (INF and START) with regard to Russia, the inspectable object exiting the site subject to continuous monitoring was a canisterized missile weighing many tens of tons. It was not feasible to sneak out such a missile in a bus, a van, an automobile or a backpack, which would not be the case with nuclear warheads.

The concept of “portal” is critically important to the effectiveness of continuous monitoring of production. If the inspectable object is a nuclear warhead, the concept of a “portal” loses all meaning. Every personnel exit, or anything that could serve as an exit, would have to be subject to continuous monitoring. This fundamentally increases the difficulty and intrusiveness of the verification regime.

During World War II, escapes routinely occurred at heavily guarded prisoner of war camps. Any tunnel large enough for a human being is large enough for a nuclear warhead, including things like utility tunnels. No previous arms control monitoring regime has had provisions related to the detection of underground tunnels leading into the production area subject to monitoring. This would create another level of difficulty.

Inspections of Nuclear Weapons at Operational Bases and Storage Facilities

The very small size of nuclear warheads would make inspections at operational bases very intrusive. The size of nuclear warheads is roughly an order of magnitude less than missiles or other delivery vehicles. The impact of the very small size criteria could be mitigated if it were only applied to designated nuclear weapon storage sites, but this would make cheating very easy by simply not designating the nuclear weapons storage area, or not all of them, as facilities in which nuclear weapons are actually stored.

Nuclear weapon storage facilities can easily be hidden. The main difference between nuclear weapons storage and conventional weapons storage is the level of security. It is certainly possible to make nuclear weapon storage facilities look different from existing nuclear weapons facilities. The use of underground facilities for nuclear weapons storage is an obvious way to deny information on what is actually happening in these facilities. For example, the Soviets

used underground facilities to hide SS-23 tactical nuclear missiles in Eastern Europe in the 1980s.⁴⁹⁴ In 1998, then-Commander of the U.S. Strategic Command, General Eugene Habinger, described the Russian underground facility at Yamantau as “a very large complex” which U.S. officials did not understand. Reportedly there are 200 underground facilities in Russia.⁴⁹⁵ No underground facility has ever been subject to inspection under the terms of any nuclear arms control agreement.

The Details of the Inspections Themselves

Rules for counting nuclear warheads would have to be developed. Presumably, anything declared to be a nuclear warhead would be counted as being a nuclear warhead. What would happen if the nuclear warhead were to be found in a container? A container that is declared to contain a nuclear warhead can easily be counted as a nuclear weapon. However, what if it were a container for a large nuclear weapon? How many smaller nuclear warheads could be stored in the large container? Obviously, a container declared to be empty could be opened to demonstrate this. However, opening an occupied nuclear warhead container would be a completely different matter. The external configuration of some nuclear warheads is classified. What would happen if there were what amounted to a container inside a container, with the internal container designed to look like the external configuration of a single large nuclear warhead but it actually contained two or more smaller nuclear warheads? As convoluted as this may sound, such actions are possible if one is determined to cheat. This is not a trivial problem.

Detection of a Covert Nuclear Warhead Production Capability

Building a covert warhead production capability is an obvious way to violate successfully a limit on tactical nuclear weapons. Non-deployed nuclear weapons of all types could be shipped to covert storage facilities. The lower the permitted level of nuclear weapons, that is, the closer to nuclear zero, the easier and cheaper it is to create a covert warhead production capability of considerable significance. In a world of a few hundred warheads or nuclear zero, even a covert capability to produce 50-100 weapons a year would have enormous significance, giving a cheater the ability to coerce or destroy its adversaries while enjoying a large measure of impunity.

Creating a small undeclared nuclear warhead production facility is fairly easy and relatively inexpensive (particularly the way the Russians do business.) Even a production capability of 50-100 weapons a year could produce a force of 1,000 to 2,000 covert weapons over a twenty-year period. The life of Soviet legacy nuclear warheads is 10 to 20 years and an effort is being made to increase warhead service life.⁴⁹⁶

To create a covert nuclear warhead production capability it would not be necessary to replicate the entire nuclear warhead production complex, but only the final assembly facility for nuclear warheads. This is the only portion of the nuclear warhead production infrastructure that would have to be covert. Even under nuclear zero, most of the nuclear fuel cycle would continue to exist as part of a nuclear power industry. The only thing that would have to be kept covert would be pit production capability, assembly and disassembly capability for the weapons and the facility for fabrication of the thermonuclear components. Such capabilities could easily be hidden in any number of Russia's deep-underground facilities. Perhaps this has all already been done. It is a dangerous mistake to assume that everything is known about what is happening in Russia or China in the nuclear arena.

The detection of a small covert production facility would be very difficult. No arms control inspection regime has had an “anywhere/anytime” mandatory inspection provision. Developing one in the future is unlikely.

The Bad Verifications Precedents Established by New START

Due to New START, any inspection regime for nuclear warheads would be built on a shaky foundation. The Obama administration reportedly now seeks to negotiate additional limitations on deployed strategic nuclear weapons, limitations on non-strategic nuclear weapons, and limitations on all types of non-deployed nuclear weapons, without any verification basis for this in New START. A useful New START provision would have been to establish a monitoring regime for counting nuclear weapons at bomber base weapons storage areas. Unlike missiles, bombers are not on alert with nuclear weapons normally loaded on the aircraft. Inspection of nuclear weapons stored at bomber bases under New START could have provided at least some useful experience with counting nuclear weapons that were not deployed on delivery vehicles. Instead, bombers weapons were not counted. This was a concession to Russia.

Any verification regime for a treaty involving the reduction or limitation of tactical nuclear weapons or non-deployed nuclear weapons of all types must involve continuous monitoring of nuclear warhead production. In light of Russia’s large warhead production capability, if this were not the case the verification regime would be nothing more than a charade. Absent continuous monitoring, all the inspectors would do would be to count the number of nuclear weapons present at *declared* nuclear weapons storage facilities. A virtually infinite number could be present at undeclared nuclear weapons storage sites. The only limit would be the number that the Russians could afford to build.

Continuous monitoring of mobile ICBM production was a critical part of the both the INF Treaty and the START Treaty verification regimes. Sadly, continuous monitoring of missile production is completely eliminated in New START. Thus, it will be much more difficult to negotiate a regime for continuous monitoring of nuclear warhead production, which is inherently much more difficult and intrusive than monitoring ballistic missile production and is certain to be strongly opposed by Russia. The abolition of continuous monitoring of mobile ICBM production creates an opportunity for Russia to build a covert force of mobile ICBMs. The longer the gap of production monitoring capability lasts, the more significant the potential size of the covert force could be.

Other New START loopholes, such as the absence of constraints on long-range nuclear air- and surface ship-launched ballistic missiles, considerably increase potential for the creation of a covert nuclear force. These weapons would be completely outside of New START, including the verification regime. A covert force could become larger with the passage of time.

The elimination of the START Treaty telemetry regime from new START means U.S. understanding of the new and modified Russian missiles is likely to decline dramatically over time. Consequently, understanding of the size of new Russian strategic nuclear missile warheads also will probably degrade, especially if the Russians practice data denial in missile testing.

The New START verification regime reduces the short-notice aspect of inspections, which would make the counting of nuclear weapons in nuclear weapon storage areas even more

difficult. As noted in Chapter II, the New START Treaty increased the time allowed to get inspectors to the inspection site from 9 to 24 hours. The impact of this is far worse when the item of inspection is no longer large mobile ICBMs, but rather small and lightweight nuclear warheads, which are much more easily transported than a mobile ballistic missile and potentially much more difficult to detect. Under New START, Russia has much more time to move embarrassing items outside of an inspectable area. The movement may be nothing more than moving the nuclear weapons from the declared nuclear weapons storage facility to another storage facility not on the site diagram but at the same base or very near it. The site diagram determines what buildings are subject to inspection. If nuclear weapons are moved in vehicles that do not resemble the normal vehicles used to transport nuclear weapons, the chances of detection are very low. During a 24-hour time period, there would normally be a period of darkness which would further facilitate the covert removal of nuclear weapons.

Just about any reasonable regime to count tactical nuclear warheads or non-deployed nuclear warheads of any type will require a means of distinguishing nuclear warheads from non-nuclear warheads or objects of any type that are suspected to be nuclear warheads. The obvious means is through the use of radiation detection equipment. Except for fission-free nuclear warheads, often called pure fusion weapons, and insertable capsule nuclear warheads, which are discussed above, all nuclear warheads will contain fissile material which can be detected by radiation detection equipment, at least under some circumstances. The main problem is that the New START radiation detection equipment cannot reliably detect all types of fissile material.

The New START radiation detection equipment consists of neutron detectors which are used to determine that the extra objects are not nuclear. The problem is that neutron detectors are inadequate to detect nuclear warheads based upon highly enriched uranium. Weapons based on enriched uranium have a much lower spontaneous neutron output than do weapons based upon plutonium and, hence, will not be detected by neutron detectors. In a report on nuclear terrorism, the Defense Threat Reduction Agency noted that the "discovery rates of highly-enriched uranium (HEU) remain low partly due to over-reliance on electronic radiation portal monitors, which often fail to detect HEU..."⁴⁹⁷ According to this DTRA document, "A minimal amount of shielding drastically decreases the radiation signature of uranium."⁴⁹⁸ Exactly the same thing is true in arms control inspections. The threat of encountering nuclear warheads based on highly enriched uranium during tactical nuclear weapons inspections is potentially very real because highly enriched uranium has certain advantages with regard to the suppression of fission products that will cause radioactive fallout.

It is possible to make nuclear warheads even less detectable by incorporating lead into their design. The giant 58-megaton Soviet nuclear test in 1962 substituted lead for uranium in the weapon to reduce fallout. The effect of the lead substitution was that most of the neutrons were absorbed by the lead.⁴⁹⁹ Lead can also be potentially used in Russian nuclear weapon containers, bombs, or in launchers to negate the effectiveness of neutron detectors.

In light of unlimited Russian throw-weight under New START, the inability of New START radiation detection equipment to detect all types of nuclear warheads may be central to the effectiveness of the regime, even if the Russians use small warhead covers. With neutron detectors, nuclear warheads which use only highly enriched uranium are very likely to register as non-nuclear.

Under START, an inspecting party provided its own neutron detector gear, although the gear was inspected prior to use. New START contains the amazing provision that, "For these purposes, the inspected Party shall have the right to use radiation detection equipment provided by the inspected Party, if agreed by the Parties within the framework of the BCC, or radiation detection equipment provided by the inspecting Party."⁵⁰⁰ This has the potential of making the equipment useless, since it will be very difficult to determine the criteria used in the detector software. In a classic example of political spin, Assistant Secretary of State Rose Gottemoeller described the situation as follows: "Radiation detection equipment may be used to confirm that the additional objects are not nuclear. Under New START, the two sides may agree in the treaty's Bilateral Consultative Commission (BCC) on new technologies for radiation detection that will be lighter and easier for inspectors to use than those that were available 15 years ago, when START entered into force."⁵⁰¹ Not quite.

The bad precedents established in New START will be very difficult to reverse. A significant price will almost certainly be demanded to restore the START verification provisions that fell out of New START.

Verification and Nuclear Zero

Nuclear zero is an incredibly dangerous proposal. Freeman Dyson, otherwise an extremely distinguished scientist, urged getting rid of nuclear weapons based on the "wonderful precedent with Richard Nixon's renouncing biological weapons unilaterally."⁵⁰² Even setting aside the fact that at the time President Nixon unilaterally renounced biological weapons the United States had a nuclear stockpile of almost 30,000 nuclear weapons⁵⁰³ with which to deter biological weapon attack, the handling of biological weapons under arms control has been one of the bleakest chapters in the history of arms control. In his 1987 report to Congress on Soviet noncompliance with arms control agreements, President Reagan said the Soviet Union was still in violation of the Biological Weapons Convention and that its biological arsenal "may include advanced biological agents about which we have little knowledge and against which we have no defenses."⁵⁰⁴ The 2005 State Department compliance report stated that Russia was one of the many countries that has an offensive biological warfare program.⁵⁰⁵ The United States has no in-kind deterrent. These are essentially the countries against which the United States needs a nuclear capability to deter the use of biological weapons.

The basic problem with zero nuclear weapons is that it would be completely unverifiable and the risks associated with any attempt to eliminate nuclear weapons are essentially unlimited. In a supposed non-nuclear world, a small covert nuclear arsenal would have a decisive and devastating effect.

Advocates of minimum deterrence frequently state that a few hundred nuclear weapons would be fully adequate for deterrence. If so, what is the impact of the covert retention of a few hundred nuclear weapons under a nuclear-zero arms control agreement? This question is rarely, if ever, posed by "nuclear zero" enthusiasts. What if Russia covertly retains 20 nuclear weapons, 200 nuclear weapons or 2,000 nuclear weapons? Any of these numbers is possible. The estimated numbers for Russian weapons vary widely. ITAR-TASS estimates the Russians probably have between 15,000-17,000 nuclear weapons.⁵⁰⁶

It is clear beyond any reasonable doubt that the Russians and the Chinese could retain covertly enough nuclear weapons to put the very survival of the United States at risk.⁵⁰⁷ According to Dr.

Michael P. Bernardin of the Los Alamos National Laboratory, “A high-altitude nuclear detonation would produce an electromagnetic pulse that would cover from one- to several-million square kilometers, depending upon the height of burst, with electric fields larger than those typically associated with lightning.”⁵⁰⁸ Moreover, as Dr. Lowell Wood, a member of the EMP Commission has written, “Soviet strategic strike forces characteristically have featured weaponry well-suited to efficient EMP generation over exceptionally wide areas. *That EMP strike component exists today in the Russian strategic order-of-battle, moreover likely at its maximum Cold War strength.*”⁵⁰⁹

What It All Means

The problems regarding the limitation of tactical nuclear weapons and non-deployed nuclear warheads of all types are unprecedented. There has been no experience with an inspection regime involving these kinds of weapons. Limitations on tactical nuclear weapons and non-deployed nuclear weapons can be evaded. There is no question about this. The elimination of core elements of the START verification regime in New START creates the possibility of cheating on the allowed number of deployed nuclear warheads, and permits the creation of a covert force of mobile ICBMs. The size of the possible covert force will increase with the passage of time. New START creates a bad foundation for the Obama administration’s announced agenda for post-New START agreements. The numerous Russian press reports of Russian cheating with regard to the INF Treaty must be addressed before any serious follow-on negotiation on tactical nuclear weapons can be set in motion.

The idea of verifiable “nuclear zero” is little more than a fantasy. The verification issues associated with nuclear zero are monumental. Moreover, the risks associated with nuclear zero are virtually unlimited because of the lack of any deterrent to nuclear attack once nuclear zero is reached. Writing in May 2011, the “Gang of Four” (George Shultz, William Perry, Henry Kissinger, Sam Nunn) stated that “as long as nuclear weapons exist, America must retain a safe, secure and reliable nuclear stockpile primarily to deter a nuclear attack and to reassure our allies through extended deterrence.”⁵¹⁰ Good advice, but how does it apply to the problem of cheating under nuclear zero? The continued existence of nuclear weapons under “nuclear zero” is virtually certain. There is no deterrent to nuclear attack if the United States goes to “nuclear zero.” The idea that nuclear attack can be deterred exclusively with conventional weapons is nothing more than a fantasy.

Conclusion

The New START Treaty, when measured against what should be the most basic metrics for nuclear arms limitation treaties (e.g., significant reductions or limits on nuclear weapons and effective verification measures), fails. Especially worrisome is the likely adverse effect of New START on future arms control negotiations between the United States and the Russian Federation. No reductions in deployed Russian warheads or delivery vehicles will be necessary to meet New START requirements. There is simply no doubt that the New START Treaty has degraded the START verification regime. Even some of the supporters of New START ratification voiced concern about inadequate verification. To make matters worse, Russia is now expanding its strategic nuclear forces.

What is the United States attempting to achieve in strategic nuclear arms control? Hopefully, it is not “cosmetic” arms control agreements that neither reduce the threat nor provide enhanced verification. Unfortunately, the mass media has largely parroted the political spin of the negotiators. There was no significant media reaction to the revelation by the State Department in June 2011 that Russia was already below the New START limits on deployed warheads and delivery vehicles (i.e., the treaty had no impact on them), while the United States would have to eliminate hundreds of warheads and delivery vehicles.

One of the saddest things about the New START Treaty is that the Obama administration seems to have learned little from its New START experience. In remarks made in July 2011, then-Under Secretary of State Ellen Tauscher said, “Disarmament and nonproliferation are two sides of the same coin,” adding that, “this Administration’s success in concluding the New START Treaty has helped to strengthen the nonproliferation regime.”⁵¹¹ Yet, even *The Washington Post* sees the failure of the administration’s nonproliferation policies vis-a-vis Iran: “the grim reality is that Iran’s leaders have not been deterred from their goal of producing a [nuclear] weapon, and the project is making steady progress.”⁵¹²

The problem of proliferation is broader than Iran; it is worldwide. A few months before Tauscher’s statement, retired General James R. Clapper, director of national intelligence, told the Senate Select Committee on Intelligence, “We assess that many of the countries pursuing WMD programs will continue to try to improve their capabilities and level of self-sufficiency over the next decade. Nuclear, chemical, and/or biological weapons—or the production technologies and materials necessary to produce them—may be acquired by states that do not now have such programs.”⁵¹³ One is reminded of George Kennan’s comment concerning pre-World War II arms control:

The evil of these utopian enthusiasms was not only, or even primarily, the wasted time, the misplaced emphasis, the encouragement of false hopes. The evil lay primarily in the fact that these enthusiasms distracted our gaze from the real things that were happening... The cultivation of these utopian schemes, flattering to our own image of ourselves, took place at the expense of our feeling for reality. And when the rude facts of the power conflict finally did intrude themselves directly upon us, in the form of enemies we were forced to fight in the two World Wars, we found it difficult to perceive

the relations between them and the historical logic of our epoch, because we understood the latter so poorly.⁵¹⁴

Such a utopian enthusiasm is evident in Assistant Secretary of State Rose Gottemoeller's remarks in August 2011. She stated, "The United States has made it clear that we are committed to continuing a step-by-step process to reduce the overall number of nuclear weapons, including the pursuit of a future agreement with Russia for broad reductions in all categories of nuclear weapons—strategic, non-strategic, deployed and non-deployed."⁵¹⁵ Yet there appears to be no indication that the administration is pressing this agenda with the Russians. There are no reports in either the Russian or the American press that there are any negotiations or even discussions of the Obama administration's agenda, which supposedly involves additional limitations on strategic nuclear forces, limitations on tactical nuclear weapons, limitations on non-deployed nuclear weapons and movement toward the objective of nuclear zero. There are numerous problems in regard to follow-on negotiations: 1) the Russians will not accept the Obama administration's agenda; 2) the Obama administration squandered the considerable negotiating leverage that it had; and 3) apparently the administration is not pressing the Russians to accept its agenda because its primary commitment is to its illusory policy objective—"reset."

The current thinking in the Obama administration seems to be more centered on unilateral arms reductions, as voiced by senior NSC official Gary Samore in April and May 2011, than on negotiated arms control consistent with its announced agenda. In stark contrast to its rush to negotiate the New START Treaty, Assistant Secretary Gottemoeller says more time is needed for further analysis because of the options and issues involved. According to Gottemoeller, the executive branch is not ready for negotiations or even discussions but rather "conversations" about the post-New START agenda.⁵¹⁶ She did not even announce that there were actually going to be "conversations." Moreover, she is now talking about "transparency," as distinct from "verification," which suggests that there is little or no intention on the part of the Obama administration to honor the language in the New START Resolution of Ratification concerning negotiations about tactical nuclear weapons in the near future. Negotiations have been put off until after the 2012 election, when President Obama has signaled the Russians he will exhibit more "flexibility."⁵¹⁷ Commentator Charles Krauthamer has characterized the president's remarks to Dmitry Medvedev as follows: "You don't often hear an American president secretly (he thinks) assuring foreign leaders that concessions are coming their way, but that they must wait because he's seeking reelection and he dare not tell his own people."⁵¹⁸ The meaning of these statements to Russia is clear. Immediately after the president's statements, *RIA Novosti's* columnist Konstantin von Eggert observed, "Obama's slip of the tongue does indeed give Mr. Putin an advantageous position in ballistic missile defense (BMD) negotiations ..."⁵¹⁹

What, if anything, should the United States seek from Russia concerning future arms control? The Obama administration's announced agenda, irrespective of whether it is the version that Gottemoeller or Samore discussed in 2011, is not in the U.S. national interest, even if it could be achieved. Basing the U.S.-Russia relationship on arms control is illogical in relationship to the Obama administration's belief that the United States and Russia are no longer enemies. Moreover, the relationship that the Obama administration has asserted between strategic arms control and non-proliferation is illusory. Even setting aside "nuclear zero" as far too dangerous to pursue, it is not at all clear that a low level of nuclear weapons, particularly under current

circumstances of an increasingly hostile Russia and extensive Russian nuclear modernization programs, enhances strategic stability.

Deterrence, as former Deputy Assistant Secretary of Defense Keith Payne has pointed out, is not some magic formula outside of the context of real world situations, including the mind-sets of the leaders of hostile countries. Payne wrote, “confident and near-universal claims that we should expect deterrence to function predictably at relatively low numbers of US nuclear forces—whether 300, 500, or 1,000—seemingly know how opponents will perceive US deterrence threats, value the stakes at risk, calculate costs and benefits, and make and implement decisions. Yet, these comforting promises should not be taken seriously; they reflect hubris and the appearance of, rather than the reality of, such knowledge.”⁵²⁰

Subordinating deterrence, including extended deterrence and assurance of our allies, to an arms control agenda is risky. It is difficult to see how reducing the U.S. nuclear deterrent to minimal levels is going to have a positive effect on extended deterrence. Extended deterrence is literally a matter of life or death for U.S. allies that are neighbors to rogue states and fanatical regimes. Unilateral U.S. nuclear reductions, particularly in the context of freezing the technical sophistication of most elements of the U.S. nuclear deterrent to the level that was achieved two decades or more ago, does not enhance extended deterrence. If deterrence fails, a minimum nuclear deterrent is not likely to be able to limit damage effectively. The 2010 NPR specifically rejects development of any new type of nuclear weapon and severely limits any changes to existing weapons.

Concern has been expressed about the possibility of a “proliferation cascade” as a result of the lack of credibility of extended deterrence in the emerging security context. The interim report of the U.S. Strategic Posture Commission stated that, “It appears that we are at a ‘tipping point’ in proliferation. If Iran and North Korea proceed unchecked to build nuclear arsenals, there is a serious possibility of a cascade of proliferation following.”⁵²¹ The risk of proliferation was regarded as so serious that a report by Kathleen C. Bailey and a distinguished group of academics and former government officials warned that, “Before the U.S. undertakes further reductions that affect its nuclear deterrent, it is important to reevaluate not only how many and what kind of nuclear weapons the U.S. needs for its own protection, but also what might be needed for extended deterrence for the future.”⁵²² The final report of the U.S. Strategic Posture Commission concluded that, “Their [our allies] assurance that extended deterrence remains credible and effective may require that the United States retain numbers or types of nuclear capabilities that it might not deem necessary if it were concerned only with its own defense.”⁵²³

The Obama administration talks of the importance of extended deterrence, but it clearly subordinates extended deterrence to its objectives for nuclear arms reductions. In testimony before the Senate Armed Services Committee, Keith Payne observed that, “However, the administration also has explicitly elevated nonproliferation and nuclear disarmament to the top of the US nuclear agenda, and emphasized that it sees non-proliferation and nuclear disarmament as ‘two sides of the same coin.’ This prioritization and linkage logically has led to concern that the goal of nuclear reductions will take precedence in the administration’s calculation of ‘how much is enough?’”⁵²⁴ Payne has argued for “flexibility” and “resilience” rather than reliance on the minimum deterrence the Obama administration appears to be moving toward. This is because flexibility and resilience

should reduce the risk that deterrence will fail because we do not have the threat-response options suitable for the occasion. Correspondingly, it can help to assure allies who rely on the US nuclear umbrella and may otherwise fear that the degradation of US deterrent capabilities endangers their own security. These fears could lead some allies and friends to reconsider their own need for nuclear weapons and thereby promote nuclear proliferation. We already see this dynamic in play among some allies.⁵²⁵

The combination of numerical reductions and no modernization programs to improve the capability of U.S. forces to accomplish their missions will create the worst possible amalgam of factors for the effectiveness of extended deterrence. In time, this may precipitate a proliferation cascade. Allies who are threatened by Russia, China and the rogue states are at some point going to recognize that the Obama administration's nuclear deterrent lacks flexibility, credibility, resilience, responsiveness and, in some areas, even effectiveness. U.S. strategic forces will not be nearly as effective as U.S. technology would permit.

There is already growing concern in South Korea over U.S. nuclear weapons reductions.⁵²⁶ Any sophisticated analyst in Japan or South Korea can calculate the difference in collateral damage between the use of highly accurate sub-kiloton or low-kiloton warheads and strategic nuclear weapons with the yields of hundreds of kilotons. The inflexibility of U.S. Cold War-legacy weapons at some point may encourage proliferation. The ultimate effect of a minimum deterrence posture will be to force any responsible U.S. security partner to recognize, however reluctantly, that the United States can only threaten to respond to a wide range of WMD attacks with very high-yield nuclear weapons which are not appropriate because of the scope of the collateral damage they will produce. Due to the high-yield nature of most U.S. weapons that could be used in a response, most countries' only real alternative is to defend themselves, however loath they are to do this. A 2011 study by the Rand Corporation, which focuses on Russian nuclear strategy, raises questions about the "adequacy of dual-capable aircraft (DCA) as the sole surviving element of in-theater nuclear forces" deployed in Europe.⁵²⁷ It also concluded that Russia's nuclear doctrine had implications for the basing of U.S. aircraft in Europe from the standpoint of force survivability. The U.S. Strategic Commission also noted the fact that, "The requirements of extended deterrence in Europe are evolving, given the changing relationship with Russia, the perception of some allies that they are keenly vulnerable to Russian military coercion, and the perception of others of a rising nuclear threat from the Middle East."⁵²⁸ U.S. defense policy has created a situation where we cannot respond in-kind to a large number of types of nuclear attacks by Russia. This is hardly a good basis for extended deterrence.

U.S. relations with Russia should directly relate to Russian behavior in the world, which is increasingly at odds with U.S. interests. Russian rhetoric about nuclear weapons cannot be ignored and the mindless repetition that Russia is "not our enemy" is little more than a fantasy. The militant ideological agenda of communism no longer dominates Russian policy, but legacy Cold War attitudes toward the United States are still alive and well in Moscow. Critically, communism has been replaced by authoritarian Putinism. If the adverse trends in Russia are ignored, there will be more of the same. Nations that build nuclear-armed ICBMs for the purpose of attacking the United States are not friends. They have to be deterred, and granting them military superiority in the nuclear area is exceedingly dangerous to U.S. national security interests and global stability.

Should strong leverage be used to force Russian to accept the Obama administration's nuclear arms control agenda? For a variety of reasons, probably not. First, there are serious verification problems associated with any meaningful limitations on tactical nuclear weapons, and there is virtually no possibility that Russia will comply with limitations that have a significant impact on their nuclear force plans. Second, there is no value in "cosmetic" arms control agreement that pretends to limit tactical nuclear weapons but in reality has no such effect. Third, the pressure that would be necessary to force the Russians into accepting the Obama administration's agenda would have a negative long-term effect on the U.S. relationship with Moscow.

Regarding existing arms control agreements, the United States needs to enforce compliance with the agreements it is observing. A prime candidate for serious review is the INF Treaty. The large number of reports by credible Russians that Russia is testing INF missiles with ranges in violation of the Treaty—1,000-3,000 kilometers—cannot be ignored or swept under the rug any longer. The same is true with regard to likely future Russian violations or gross circumventions of the New START Treaty.

Rather than pursue illusory arms control agreements, the United States should seek to enhance the verifiability of the New START Treaty and rebuild its nuclear deterrent in a manner that is responsible in light of current and projected threats. This means dispensing with the ideological constraints harmful to U.S. and allied security. The same is true with regard to missile defense. The Obama administration's unwise decisions to terminate most of the modernization of U.S. missile defense capabilities must be reversed. The emerging Chinese threat cannot be dealt with the necessary flexibility without effective missile defenses. The current ideological shackles must be discarded.

Notes

¹ Keith Payne, "Postscript on New START - The Senate was misinformed about the nuclear treaty," *National Review On-Line*, January 18, 2011, available at: <<http://www.nationalreview.com/articles/257329/postscript-new-start-keith-b-payne>>.

² Dmitry Zaks, "Nuclear treaty goes easy on Russia: analysts," *newsIntl*, December 27, 2010, available at: <<http://www.dawn.com/2010/12/27/nuclear-treaty-goes-easy-on-russia-analysts.htmlTrea>>.

³ "Russia to fulfill new START without eliminating battle-ready missiles – source," *ITAR-TASS*, January 14, 2001, available at: <<http://www.itar-tass.com/eng/level2.html?NewsID=15858274&PageNum=0>>.

⁴ "New START Does Not Mandate Destruction of Non-deployed Nukes – Ministry," January 17, 2011, available at: <http://goliath.ecnext.com/coms2/gi_0199-14198905/New-START-does-not-mandate.html>.

⁵ Vladimir Isachenkov, "Russia's upper house unanimously OKs New START," *The Associated Press*, January 26, 2011, available at: <http://news.yahoo.com/s/ap/20110126/ap_on_re_eu/eu_russia_us_nuclear>.

⁶ "New START Treaty Aggregate Numbers of Strategic Offensive Arms," U.S. Department of State, June 1, 2011, available at: <<http://www.state.gov/t/avc/rls/164722.htm>>.

⁷ Keith Payne, "Arms Control Amnesia," *The Wall Street Journal*, July 7, 2009, available at: <<http://nipp.org/Publication/Downloads/Publication%20Archive%20PDF/Payne%20Wall%20Street%20Journal%20July%207%202009%20article.pdf>>.

⁸ New START Working Group, The Heritage Foundation, April 30, 2010, available at: <<http://www.heritage.org/Research/Reports/2010/04/An-Independent-Assessment-of-New-START-Treaty>>.

⁹ Senator Christopher Bond, "The New START Treaty," *The Congressional Record*, November 18, 2010, available at: <<http://www.thomas.gov/cgi-bin/query/D?r111:34:./temp/~r111MwN34p>>.

¹⁰ "New START Enables Russia To Keep Nuclear Balance With U.S.," *Interfax AVN*, December 23, 2010, available at: <<http://business.highbeam.com/407705/article-1G1-245176770/new-start-enables-russia>>.

¹¹ *Nezavisimoye Voyennoye Obozreniye*, July 30, 2010.

¹² A Rebuttal to Sen. Kit Bond's November 18, 2010 Floor Speech in the U.S. Senate on the New START Treaty, U.S. Department of State, November 24, 2010, available at: <<http://www.state.gov/t/avc/rls/151981.htm>>.

¹³ Senate Armed Services Committee Hearing, June 17, 2010, Webcast, available at: <http://armed-services.senate.gov/e_witnesslist.cfm?id=4619>.

¹⁴ Rose Gottemoeller, "New START: Security Through 21st-Century Verification," *Arms Control Today*, February 16, 2010, available at: <http://www.armscontrol.org/act/2010_09/Gottemoeller>.

¹⁵ Keith Payne, "Postscript on New START - The Senate was misinformed about the nuclear treaty," op. cit.

¹⁶ Barack Obama, "To the Senate of the United States," May 13, 2011, available at: <<http://www.whitehouse.gov/sites/default/files/2010%20New%20START%20msg%20rel.pdf>>.

¹⁷ "2010 Annual Report on Implementation of the Moscow Treaty," May 3, 2010, available at: <<http://www.state.gov/t/avc/rls/rpt/141429.htm>>.

¹⁸ "Ratification of New START is success of Russian president – Putin," *Interfax*, December 29, 2010, available at: <<http://www.interfax.com/newsinf.asp?y=2010&m=8&d=10&pg=7&id=213079>>.

¹⁹ "Moscow *RIA Novosti*, March 4, 2011.

²⁰ *Izvestiya Online*, January 25, 2001.

²¹ "Moscow support to Libyan arms embargo meets reset policy – expert," *Interfax-AVN*, March 10, 2011, available at: <<http://www.interfax.co.uk/russia-cis-military-news-bulletins-in-english/moscow-support-to-libyan-arms-embargo-meets-reset-policy-expert-2/>>.

-
- ²² Robert Bridge, "Border Alert: Nuke war risk rising, Russia warns," *Russia Today*, November 17, 2011, available at: <<http://rt.com/politics/makarov-nuclear-russia-nato-575/>>.
- ²³ "Treaty with Russia on Measures for Further Reduction and Limitation of Strategic Offensive Arms (The New START Treaty)," Senate Foreign Relations Committee, October 2010, pp. 110-111, available at: <<http://foreign.senate.gov/treaties/details/?id=1668ace8-5056-a032-526a-29c8fc32e1dc>>.
- ²⁴ "Treaty with Russia on Measures for further Reduction and Limitation of Strategic Offensive Arms (The New START Treaty)," op. cit. p. 112.
- ²⁵ "Opening Statement James A. Baker, III Senate Foreign Relations Committee 2:30 p.m. Wednesday, May 19, 2010," available at: <<http://foreign.senate.gov/imo/media/doc/BakerTestimony100519p.pdf>>.
- ²⁶ *Nezavisimoye Voyennoye Obozreniye Online*, July 30, 2012.
- ²⁷ John R. Bolton, "A Treaty for Utopia," *National Review Online*, May 3, 2010, available at: <<http://article.nationalreview.com/431722/a-treaty-for-utopia/john-r-bolton?page=4>>.
- ²⁸ Bond, "The New START Treaty." op. cit.
- ²⁹ Rose Gottemoeller, "New START: Security Through 21st-Century Verification," op. cit.
- ³⁰ *Agentstvo Voyennyykh Novostey*, May 30, 2005.
- ³¹ "Tactical nuclear arms cuts could be discussed after New START is implemented – Lavrov," *Interfax*, December 24, 2010, available at: <<http://www.interfax.com/newsinf.asp?y=2009&m=11&d=2&pg=9&id=211854>>.
- ³² "Russia says too early to talk tactical nuclear weapons with United States," *RIA Novosti*, January 30, 2011, available at: <http://en.rian.ru/mlitary_news/20110129/162362622.html>.
- ³³ "RF's strategic stability priorities are START, ABM, CFE—deputy FM," *ITAR-TASS*, January 29, 2011, available at: <<http://www.itar-tass.com/eng/level2.html?NewsID=15903274&PageNum=0>>.
- ³⁴ Dmitriy Astakhov, "U.S.-Russian talks on tactical nuclear arms cuts will take time - U.S. official," *RIA Novosti*, March 22, 2011, available at: <<http://www.en.rian.ru/world/20110322/163136512.html>>.
- ³⁵ "Biden plans to 'take stock' of reset in US-RF relations – advisor," *ITAR-TASS*, March 5, 2011, available at: <<http://www.itar-tass.com/eng/level2.html?NewsID=16016652&PageNum=0>>.
- ³⁶ "Ivanov Says No Cooperation With U.S. On Missile Defense," May 23, 2007, available at: <<http://www.rferl.org/content/article/1076663.htm>>.
- ³⁷ Andrei Plashnik, "Russia, US and NATO at odds on missile defense shield in Europe," *The Voice of Russia*, March 4, 2011, available at: <<http://english.ruvr.ru/2011/03/04/46954802.html>>.
- ³⁸ Mikhail Fomichev, "Russia to decide on missile deployment if no deal with NATO," *RIA Novosti*, January 24, 2011, available at: <http://en.rian.ru/mlitary_news/20110124/162277101.html>.
- ³⁹ "Russia insists on equal part in European missile defense," *RIA Novosti*, January 20, 2011, available at: <http://www.en.rian.ru/mlitary_news/20110127/162324376.html>.
- ⁴⁰ Alexey Kudenko, "European missile shield should stipulate joint decision making - Russian NATO envoy," *RIA Novosti*, January 12, 2011, available at: <<http://en.rian.ru/russia/20110112/162107128.html>>.
- ⁴¹ "Defence minister outlines benefits of new START treaty to Russia," *Interfax-AVN*, December 24, 2010, available at: <<http://www.accessmylibrary.com/article-1G1-245194917/defence-minister-outlines-benefits.html>>.
- ⁴² Christopher Ford, "The New START Agreement: Reduce by a Third," April 4, 2010, available at: <<http://www.newparadigmsforum.com/NPFtestsite/?p=47>>.
- ⁴³ "2011 Annual Report on the Implementation of the Moscow Treaty," June 1, 2011, available at: <<http://www.state.gov/t/avc/rls/rpt/164828.htm>>.
- ⁴⁴ Ilya Kramnuk, "New START Treaty based on Mutual Russian–U.S. Concessions," *RIA Novosti*, April 12, 2010, at <<http://en.rian.ru/analysis/20100409/158499862.html>>.
- ⁴⁵ Pavel Podvig, "Assessing START follow-on," *Bulletin of the Atomic Scientists*, March 29, 2010, available at: <<http://thebulletin.org/web-edition/columnists/pavel-podvig/assessing-start-follow>>.

⁴⁶ A. Zubtsov, "Russia to Develop a New Heavy ICBM by 2020, *RIA Novosti*, December 20, 2010, available at: <<http://en.rian.ru/russia/20101220/161856876.html>>.

⁴⁷ *Izvestiya*, May 13, 2011.

⁴⁸ Peter Baker, "Arms Control May Be Different on Paper and on the Ground," *The New York Times*, March 30, 2010, available at: <<http://www.nytimes.com/2010/03/31/world/europe/31start.html>>.

⁴⁹ Kramnuk, "New START Treaty based on Mutual Russian–U.S. Concessions," op. cit.

⁵⁰ "The New START Treaty (Treaty Doc 111-5), Hearings Before the Committee on Foreign Relations, United States Senate 111th Congress, Second Session, April 29, May 18, 19, 25, June 10, 15, 16, 24, and July 15, 2010," p. 357, available at: <<http://foreign.senate.gov/treaties/details/?id=1668ace8-5056-a032-526a-29c8fc32e1dc>>.

⁵¹ Ben Lerner, *Mapping a National Security Failure: Ratification of the New START Treaty*, Washington: Center for Security Policy, 2011, p. 16, available at: <<http://supportsecurefreedom.org/wp-content/uploads/2011/10/Lerner-Mapping-a-National-Security-Failure-10272011.pdf>>.

⁵² Peter Baker, "Arms Control May Be Different on Paper and on the Ground," *The New York Times*, March 30, 2010, available at: <<http://www.nytimes.com/2010/03/31/world/europe/31start.html>>.

⁵³ "Putin Wants New Long-Range Bomber," *United Press International*, March 6, 2010, available at: <[http:// defense-studies.blogspot.com/2010/03/putin-wants-new-long-range-bomber.html](http://defense-studies.blogspot.com/2010/03/putin-wants-new-long-range-bomber.html)>.

⁵⁴ "Special Briefing Ellen Tauscher Under Secretary for Arms Control and International Security Washington, DC March 29, 2010," available at: <<http://www.state.gov/t/us/139205.htm>>.

⁵⁵ *The Nuclear Posture Review*, U.S. Department of Defense, April 2010, p. 21, available at: <[http:// www.defense.gov/npr/docs/2010%20nuclear%20posture%20review%20report.pdf](http://www.defense.gov/npr/docs/2010%20nuclear%20posture%20review%20report.pdf)>.

⁵⁶ "Presentation to Senate Arms Services Committee, Subcommittee on Strategic Forces, United States Senate, Subject: ICBMs, Helicopters, Cruise Missiles, Bombers and Warheads Statement of: Maj Gen Roger Burg (AF/A3S)," March 28, 2007, p. 7, available at: <http://www.globalsecurity.org/wmd/library/congress/2007_h/070328-burg.pdf>.

⁵⁷ "The New START Treaty (Treaty Doc 111-5), Hearings Before the Committee on Foreign Relations, United States Senate 111th Congress, Second Session, April 29, May 18, 19, 25, June 10, 15, 16, 24, and July 15, 2010," op. cit., p. 208.

⁵⁸ Kingston Reif, "Some Thoughts on the Bomber Counting Rule," *The Nukes of Hazard*, April 4, 2010, available at: <<http://nukesofhazardblog.com/story/2010/4/4/15511/46379>>.

⁵⁹ Pavel Podvig, "The New START bomber count and upload potential," March 31, 2010, available at: <[http:// russianforces.org/blog/2010/03/the_new_start_bomber_count_and.shtml](http://russianforces.org/blog/2010/03/the_new_start_bomber_count_and.shtml)>.

⁶⁰ Hans M. Khristensen, "New START Treaty Has New Counting," *Federation of American Scientists*, March 29, 2010, available at: <<http://www.fas.org/blog/ssp/2010/03/newstart.php>>.

⁶¹ Moscow, *ITAR-TASS*, October 6, 2010.

⁶² "The New START Treaty (Treaty Doc 111-5), Hearings Before the Committee on Foreign Relations, United States Senate 111th Congress, Second Session, April 29, May 18, 19, 25, June 10, 15, 16, 24, and July 15, 2010," op. cit. p. 100.

⁶³ "Bear-H, Tu-95K Bear-B, Tu-95K-22 Bear-G, Tu-95KD Bear-B, Tu-95KM Bear-C, Tu-95M Bear-A, Tu-95MR Bear-E, Tu-95MS-16 Bear-H6, Tu-95MS-6 Bear-H16, Tu-95RT Bear-D and Tu-95U Bear-T," Deagel Com., available at: <http://www.deagel.com/Long-Range-Attack-Aircraft/Tu-95MS_a000690001.aspx>.; "Russian Air Force Adopts New Cruise Missile," *Ria Novosti*, March 20, 2011, available at: <http://en.rian.ru/military_news/20120320/172284223.html>; "November 2010 Update to the National Defense Authorization Act of FY2010 Section 1251 Report New START Treaty Framework and Nuclear Force Structure Plans," p. 12, available at: <http://www.lasg.org/CMRR/Sect1251_update_17Nov2010.pdf>.

⁶⁴ "An Independent Assessment of New START Treaty," April 30, 2010, available at: <<http://www.heritage.org/Research/Reports/2010/04/An-Independent-Assessment-of-New-START-Treaty>>.

⁶⁵ *Nezavisimoye Voyennoye Obozreniye*, March 11, 2011.

⁶⁶ Heritage Foundation, "An Independent Assessment of New START Treaty," op.cit. p. 4.

⁶⁷ Christopher Ford, "Does 'New START' Fumble Reloads and Rail-Mobile ICBMs?," April 26, 2010, available at: <http://www.newparadigmsforum.com/New_Paradigms_Forum/Nuclear_Weapons/Entries/2010/4/26_New_START_Fumbles_Missile_REloads_and_Rail-Mobile_ICBMs.html>.

⁶⁸ "An Independent Assessment of New START," op. cit.

⁶⁹ *ITAR-TASS*, December 20, 2010.

⁷⁰ "Missile supply to Russian army to increase dramatically in next few years – Serdyukov," *Interfax*, July 1, 2011, available at: <<http://www.interfax.co.uk/russia-cis-military-news-bulletins-in-english/missile-supply-to-russian-army-to-increase-dramatically-in-next-few-years-serdyukov-2/>>. Anatoly Zak, "An overview of ground-based ballistic missiles developed in the former Soviet Union since the end of World War II," *Russianspaceweb*, July 15, 2011, available at: <http://www.russianspaceweb.com/rockets_icbm.html>.

⁷¹ Jon Kyl, "Title: Treaty with Russia on Measures for Further Reduction and Limitation of Strategic Offensive Arms—Resumed," December 21, 2010, available at: <https://www.votesmart.org/speech_detail.php?sc_id=627916&keyword=&phrase=&contain=>>.

⁷² U.S. Senate Resolution of Ratification for the New START Treaty, December 22, 2010, understanding 2b and 2d, available at: <foreign.senate.gov/download/?id=E4C3A1B3-D023-4F58-8690>.

⁷³ "Duma committee may decide to reconsider New START Treaty ratification next week," *Interfax*, October 29, 2010, available at: <<http://www.cdi.org/russia/johnson/russia-nuclear-start-treaty-duma-nov-256.cfm>>.

⁷⁴ The New START Treaty, Protocol, part 1, definition 67.

⁷⁵ The New START Treaty, Protocol, Fifth Agreed Statement.

⁷⁶ "Possible To Transform Intercontinental Missile Into Shorter Range Missile," *Interfax-AVN Online*, December 20, 2010, available at: <<http://business.highbeam.com/407705/article-1G1-244976711/possible-transform-intercontinental-missile-into-shorter>>.

⁷⁷ *Voyenno-Promyshlennyy Kuryer*, May 5, 2010.

⁷⁸ *America's Strategic Posture The Final Report of the Congressional Commission on the Strategic Posture of the United States*, Washington DC: U.S. Institute of Peace Press, 2009, p. 13.

⁷⁹ "Statement of Dr. James N. Miller, Principal Deputy Under Secretary of Defense for Policy Before the House Committee on Armed Services, November 2, 2011," p. 1, available at: <http://armedservices.house.gov/index.cfm/files/serve?File_id=faad05df-9016-42c5-86bc-b83144c635c9>.

⁸⁰ "The New START Treaty (Treaty Doc 111-5), Hearings Before the Committee on Foreign Relations, United States Senate 111th Congress, Second Session, April 29, May 18, 19, 25, June 10, 15, 16, 24, and July 15, 2010," op. cit. p. 129.

⁸¹ "Moscow, Washington must demonstrate openness regarding nuclear potentials – expert," *Interfax-AVN*, April 18, 2010, available at: <<http://www.interfax.co.uk/russia-cis-general-news-bulletins-in-english/moscow-washington-must-demonstrate-openness-regarding-nuclear-potentials-expert/>>.

⁸² *Nezavisimoye Voyennoye Obozreniye*, December 22, 2000.

⁸³ Robert Monroe, "Trouble with Russia's tactical nukes," *The Wall Street Journal*, November 30, 2010, available at: <http://online.wsj.com/article/SB1000142405274870458480457_5645212272670200.html>.

⁸⁴ Carl Bildt and Radek Sikorski, "Next, the Tactical Nukes," *New York Times*, February 1, 2010, available at: <<http://www.nytimes.com/2010/02/02/opinion/02iht-edbildt.html>>.

⁸⁵ "Lithuania claims Russia deployed warheads near border," *AFP*, February 8, 2011, available at: <http://www.spacedaily.com/reports/Lithuania_claims_Russia_deployed_warheads_near_border_999.html>.

⁸⁶ *Moscow Nezavisimoye Voyennoye Obozreniye*, December 22, 2000.

⁸⁷ *Yezhednevnyy Zhurnal*, September 5, 2007.

⁸⁸ Robert Bell, Interview, *Jane's Defense Weekly*, August 8, 1999, p. 40.

⁸⁹ “The New START Treaty (Treaty Doc 111-5), Hearings Before the Committee on Foreign Relations, United States Senate 111th Congress, Second Session, April 29, May 18, 19, 25, June 10, 15, 16, 24, and July 15, 2010,” op. cit. p. 129.

⁹⁰ Stephen G. Rademaker, “The Kremlin’s Nuclear Trump Card,” *The Moscow Times*, June 28, 2010, available at: <<http://www.themoscowtimes.com/opinion/article/the-kremlins-nuclear-trump-card/409166.html>>.

⁹¹ “U.S. Assistant Secretary of State Rose Gottemoeller outlines the U.S. position on a new strategic arms reduction treaty with Russia,” *Interfax*, available at: <<http://www.interfax.com/interview.asp?id=98894>>.

⁹² *Moskovskiye Novosti*, April 21, 2011.

⁹³ Oleg Lastochkin, “Moscow keeps tactical nuclear weapons cuts issue low-key - Russian senator,” *Ria Novosti*, April 30, 2011, available at: <http://en.rian.ru/military_news/20110430/163787812.html>.

⁹⁴ “Carnegie Endowment for International Peace, Russia-U.S. Relations: Perspectives and Prospects for the New Agenda, Welcome and Moderator: Jessica T. Mathews, President, Carnegie Endowment Speakers: Sergey Lavrov, Minister of Foreign Affairs, The Russian Federation, Thursday, May 7, 2009,” available at: <http://www.carnegieendowment.org/files/0507_transcript_lavrov.pdf>.

⁹⁵ “The New START Treaty (Treaty Doc 111-5), Hearings Before the Committee on Foreign Relations, United States Senate 111th Congress, Second Session, April 29, May 18, 19, 25, June 10, 15, 16, 24, and July 15, 2010,” op. cit. p. 306.

⁹⁶ *America’s Strategic Posture The Final Report of the Congressional Commission on the Strategic Posture of the United States*, Washington D.C.: U.S. Strategic Commission, April 2009, p. 67, available at: <http://www.usip.org/files/America%27s_Strategic_Posture_Auth_Ed.pdf>.

⁹⁷ *Interfax*, August 5, 2010.

⁹⁸ “Tactical nuclear weapons must not be deployed abroad – Lavrov,” *Interfax*, March 1, 2011, available at: <<http://www.interfax.co.uk/russia-cis-military-news-bulletins-in-english/tactical-nuclear-weapons-must-not-be-deployed-abroad-lavrov-2/>>.

⁹⁹ John Bolton, *Surrender Is Not An Option*, New York: Threshold Editions, 2007, p. 75.

¹⁰⁰ “START Treaty Between the United States of America and the Union of Soviet Socialist Republic on the Reduction and Limitation of Strategic Offensive Arms Signed in Moscow, July 31, 1991,” Washington D.C: U.S Department of State, October, 1991, pp. 120, 208.

¹⁰¹ Telmanov, “The Successor to the Satan Will Acquire 15 Nuclear Warheads: the Makeyev Design Bureau Has Set About Building a New Heavy Ground-Based Missile,” op. cit.

¹⁰² “New START: Potemkin Village Verification,” Washington D.C.: The Heritage Foundation, June 24, 2010, available at: <<http://www.heritage.org/research/reports/2010/06/new-start-potemkin-village-verification?query=New+START:+Potemkin+Village+Verification>>.

¹⁰³ “New START Treaty Aggregate Numbers of Strategic Offensive Arms,” October 22, 2011, available at: <<http://www.state.gov/t/avc/rls/176096.htm>>.

¹⁰⁴ “An Independent Assessment of New START,” op. cit..

¹⁰⁵ Pavel Podvig, “Some details of the New START negotiations,” April 21, 2011, available at: <http://russianforces.org/blog/2011/04/some_details_of_the_new_start.shtml>.

¹⁰⁶ “New START Treaty Aggregate Numbers of Strategic Offensive Arms,” op. cit.

¹⁰⁷ Bolton, *Surrender Is Not An Option*, op. cit. p. 75.

¹⁰⁸ The START Treaty, Protocol, Part 1 definition 6, 10, 37, and 77.

¹⁰⁹ *Ibid.* definition 10.

¹¹⁰ “Article-By-Article Analysis of New START Treaty Documents,” Article III, available at: <<http://www.state.gov/t/avc/trty/141829.htm>>. Henceforth referred to as the “New START Article-By-Article Analysis.”

¹¹¹ “Statement of Secretary of Defense Robert M. Gates Before the Senate Foreign Relations Committee Hearing on the New START Treaty, May 18, 2010,” pp. 2-3, available at: <<http://foreign.senate.gov/imo/media/doc/GatesTestimony100518a.pdf>>.

¹¹² The New START Treaty, Article IV, paragraph 2.

¹¹³ The New START Treaty, Article V, paragraph 2, The New START Treaty, Protocol, Part 6, Section 1, paragraph d.

¹¹⁴ "Statement of Dr. James N. Miller, Principal Deputy Under Secretary of Defense for Policy Before the Senate Armed Services Committee, July 20, 2010," op. cit. p. 4.

¹¹⁵ *On Ratification of the Treaty between the Russian Federation and the United States of America on Measures for the Further Reduction and Limitation of Strategic Offensive Arms, Adopted by the State Department*, January 25, 2011. Translation by U.S. Department of State, LS No. 01-2011-0415, Article II, paragraph 1.

¹¹⁶ "U.S. Senate's interpretation of conventional warheads unacceptable for Russia - Lavrov (Part 2)," *Interfax*, December 24, 2010, available at: <<http://business.highbeam.com/407705/article-1G1-245198227/us-senate-interpretation-conventional-warheads-unacceptable>>.

¹¹⁷ "New START Treaty Resolution of Advice and Consent to Ratification," pp. 6-7, available at: <<http://foreign.senate.gov>>.

¹¹⁸ Podvig, "Some details of the New START negotiations," op. cit.

¹¹⁹ James Woolsey and Rebecca Hendricks, "Iran and the Missile Defense Imperative," *Wall Street Journal*, July 14, 2010, available at: <<http://online.wsj.com/article/SB10001424052748704288204575362840121771862.html>>.

¹²⁰ "Lavrov says missile defense projects should not 'upset parity'," *RIA Novosti*, February 5, 2011, available at: <<http://en.rian.ru/russia/20110205/162465891.html>>.

¹²¹ Ibid.

¹²² Ballistic Missile Defense Review Report, Washington D.C.: U.S. Department of Defense, February 2010, available at: <http://www.defense.gov/bmdr/docs/BMDR%20as%20of%2026JAN10%200630_for%20web.pdf>. John T. Bennet, "MDA Requests Kill EIT, Focuses on Ascent Phase," *Defense News*, May 7, 2009, available at: <<http://www.defensenews.com/story.php?i=4079560>>.

¹²³ "Key Facts about the New START Treaty," The White House, March 26, 2010, available at: <<http://www.whitehouse.gov/the-press-office/key-facts-about-new-start-treaty>>.

¹²⁴ Keith Payne, "Evaluating the U.S.-Russia Nuclear Deal," *The Wall Street Journal*, April 1, 2010, available at: <<http://nipp.org/National%20Institute%20Press/Current%20Publications/PDF/WSJ%20Payne%20Article%20April%202010.pdf>>.

¹²⁵ The New START Treaty, Article V, paragraph 3.

¹²⁶ "Russia insists on equal part in European missile defense," *RIA Novosti*, January 27, 2011, available: <http://en.rian.ru/military_news/20110127/162324376.html>.

¹²⁷ "Ivanov Says Russia Wants 'Red-Button' Rights on U.S. Missile-Defense Plan," *Bloomberg.com*, April 8, 2011, available at: <<http://www.bloomberg.com/news/2011-04-08/ivanov-says-russia-wants-red-button-rights-on-u-s-missile-defense-plan.html>>.

¹²⁸ "General Staff obliged to react, if radars, missile interceptors emerge near Russia – FM," *ITAR-TASS*, October 22, 2011, available at: <<http://www.itar-tass.com/en/c154/253765.html>>.

¹²⁹ "Moscow to give military-technical answer if US, NATO further ignore its concerns – Lavrov," *ITAR-TASS*, November 1, 2011, available at: <<http://www.itar-tass.com/en/c154/261497.html>>.

¹³⁰ "New START Demonstrates U.S., Russia's Reluctance to Make Serious Cuts in Nuclear Arsenals – Expert," *Interfax*, April 8, 2011, available at: <<http://www.interfax.co.uk/russia-cis-military-news-bulletins-in-english/new-start-demonstrates-u-s-russias-reluctance-to-make-serious-cuts-in-nuclear-arsenals-expert-2/>>.

¹³¹ Bolton, "A Treaty for Utopia," op. cit.

¹³² Bond, "The New START Treaty." op. cit. p. S8052.

¹³³ James Woolsey, "Old Problems with New START," *Wall Street Journal*, November 15, 2010, available at: <<http://www.sroblog.com/2010/11/15/r-james-woolsey-old-problems-with-new-start-wsj/>>.

¹³⁴ "New START: Potemkin Village Verification," op. cit.

- ¹³⁵ "Joint Statement on Parameters of Future Nuclear Reductions," March 21, 2007, available at: <http://www.gdb/nisprofs/fulltext/treaties/abm/abm_heje.htm>.
- ¹³⁶ "U.S. Assistant Secretary of State Rose Gottemoeller outlines the U.S. position on a new strategic arms reduction treaty with Russia," *Interfax*, May 26, 2009, available at: <<http://www.interfax.com/interview.asp?id=98894>>.
- ¹³⁷ "New START Treaty Cuts Number of Annual Inspections to 18," *Interfax*, April 12, 2010, available at: <<http://business.highbeam.com/407705/article-1G1-231105989/new-start-treaty-cuts-number-annual-inspections-18>>.
- ¹³⁸ *Nezavisimoye Voyennoye Obozreniye*, July 30, 2010.
- ¹³⁹ "Capability of the United States to Monitor Compliance with the START Treaty," Senate Select Committee on Intelligence, September 29, 1992, p. 3, available at: <<http://intelligence.senate.gov/pdfs102nd/102431.pdf>>.
- ¹⁴⁰ "The New START Treaty (Treaty Doc 111-5), Hearings Before the Committee on Foreign Relations, United States Senate 111th Congress, Second Session, April 29, May 18, 19, 25, June 10, 15, 16, 24, and July 15, 2010," op. cit. p. 262.
- ¹⁴¹ *Adherence to and Compliance with Arms Control, Nonproliferation, and Disarmament Agreements and Commitments*, U.S. Department of State, Bureau of Verification and Compliance, June 22, 2010, available at: <<http://www.state.gov/t/vci/rls/rpt/51977.htm>> (June 22, 2010). Bill Gertz, "START 'Cheating,'" *The Washington Times*, June 22, 2010, available at: <http://www.gertzfile.com/gertzfile/ring_102209.html>.
- ¹⁴² Bond, "The New START Treaty." op. cit. p. S8053.
- ¹⁴³ Ibid.
- ¹⁴⁴ Paula DeSutter, "Verification and the New START Treaty," The Heritage Foundation, July 12, 2010, available at: <<http://www.heritage.org/research/lecture/verification-and-the-new-start-treaty>>.
- ¹⁴⁵ The New START Treaty, The Protocol, Part V, Section 6, paragraph 14.
- ¹⁴⁶ *Nezavisimaya Gazeta*, October 13, 2008.
- ¹⁴⁷ *SpaceNews.Ru*, June 3, 2008.
- ¹⁴⁸ *Interfax-AVN Online*, January 27, 2011, "New Warhead for Russian Missile?," December 27, 2010, available at: <<http://www.militaryphotos.net/forums/archive/index.php/t-191731.html>>.
- ¹⁴⁹ "Russia tests ballistic Missile," *RIA Novosti*, September 30, 2011, available at: <http://en.rian.ru/military_news/20110930/167259462.html>.
- ¹⁵⁰ The New START Treaty, The Protocol, Agreed Statement 8, paragraph 3.
- ¹⁵¹ Morton Bremer Maerli, "Crude Nukes on the Lose," Norsk: Norweight Institute of International Affairs, 2004, p. 12, available at: <<http://www.ciaonet.org/wps/mam11/index.html>>.
- ¹⁵² The New START Treaty, Protocol, Annex Section VI paragraph 1.
- ¹⁵³ *Capability of the United States to Monitor Compliance with the START Treaty—September 29, 1992*, pp. 4-5.
- ¹⁵⁴ *Adherence to and Compliance with Arms Control and Nonproliferation Agreements and Commitments*, 2001, available at: <<http://www.state.gov/t/avc/rls/rpt/22322.htm>>.; *Adherence To and Compliance With Arms Control Agreements*, U.S. State Department, 1998, available at: <<http://www.state.gov/www/global/arms/reports/annual/comp98.html>>.; *Adherence To and Compliance With Arms Control Agreements*, 1997, available at: <<http://www.state.gov/www/global/arms/reports/annual/comp97.html>>.; *Adherence To and Compliance With Arms Control Agreements*, 1996, available at: <<http://www.state.gov/www/global/arms/reports/annual/comp.html>>.
- ¹⁵⁵ *Adherence to and Compliance with Arms Control and Nonproliferation Agreements and Commitments*, August 2005, p. 31, available at: <<http://www.state.gov/t/avc/rls/rpt/c15720.htm>>.
- ¹⁵⁶ The New START Treaty, Protocol, Section 5, paragraph 7.
- ¹⁵⁷ *Adherence to and Compliance with Arms Control and Nonproliferation Agreements and Commitments*, August 2005, op. cit. p. 13-14.
- ¹⁵⁸ The New START Treaty, Protocol, Part V, Section VI, paragraph 6(a).
- ¹⁵⁹ "CAST Director Ruslan Pukhov Comments on START III Implementation," *RIA Novosti*, April 7, 2011, available at: <<http://www.cdi.org/russia/johnson/russia-nuclear-new-start-treaty-720.cfm>>.

¹⁶⁰ Ibid.: and The President's Report to the Congress on Soviet Compliance with Arms Control Agreements," The White House, January 23, 1984, p. 4.

¹⁶¹ Heritage Foundation, "Potemkin Village Verification," op. cit.

¹⁶² "Bilateral Consultative Commission: Decision on the Number of Launches of ICBMs and SLBMs Conducted in 2011, on Which an Exchange of Telemetric Information Will Be Carried Out in 2012," Washington D.C.: U.S. Department of State, February 7, 2012, available at: <<http://www.state.gov/t/avc/rls/183539.htm>>.

¹⁶³ Woolsey, "Old Problems with New START," op. cit.

¹⁶⁴ DeSutter, "Verification and the New START Treaty," op. cit.

¹⁶⁵ The New START Treaty, Telemetry Annex, Part II, paragraph 3, available at: <<http://www.state.gov/documents/organization/141292.pdf>>.

¹⁶⁶ "Federal Law On Ratification of the Treaty between the Russian Federation and the United States of America on Measures for the Further Reduction and Limitation of Strategic Offensive Arms," Article 2, paragraph 7, Translated by U.S. Department of State Office of Language Services Translating Division, available at: <<http://www.lewis.armscontrolwonk.com/archive/3481/russian-new-start-resolution>>.

¹⁶⁷ "NST Nuclear and Space Talks: U.S. and Soviet Proposals," Arms Control and Disarmament Agency, May 20, 1987, p. 1.; "Nuclear and Space Talks: U.S. and Soviet Proposals," Arms Control and Disarmament Agency, November 16, 1988, p. 1.

¹⁶⁸ Ronald F. Lehman II, "The Arms Control Legacy Of The Reagan Administration: A Focus on START," *Strategic Review*, Fall 1988, p. 17.

¹⁶⁹ *The INF Treaty Hearings Before the Foreign Relations Committee*, United States Senate, Part 3, Washington D.C.: Government Printing Office, 1988, p. 169.

¹⁷⁰ *Capability of the United States to Monitor Compliance with the START Treaty—September 29, 1992*, op. cit. p. 3.

¹⁷¹ Ibid.

¹⁷² "New START: Potemkin Village Verification," op. cit.

¹⁷³ *Krasnaya Zvezda Online*, December 17, 2010.

¹⁷⁴ Pavel Podvig, "Some details of the New START negotiations," op. cit.

¹⁷⁵ Ellen Tauscher, "New START Treaty and the Obama Administration's Nonproliferation Agenda," March 29, 2010, at: <<http://www.state.gov/t/us/139205.htm>>.

¹⁷⁶ "Old Problems with New START," op. cit.

¹⁷⁷ The START Treaty Article VI, paragraphs 1-3. and Article XII, paragraph 1(a).

¹⁷⁸ *The President's Report to the Congress on Soviet Noncompliance with Arms Control Agreements*, Washington D.C.: The White House, January 23, 1984, p. 5.

¹⁷⁹ *Adherence to and Compliance with Arms Control, Nonproliferation, and Disarmament Agreements and Commitments*, 2005, op. cit.

¹⁸⁰ *The President's Report to the Congress on Soviet Noncompliance with Arms Control Agreements*, January 1984, op. cit. p. 5.

¹⁸¹ "SOV - 15Ž42 / Temp-2S / RS-14 / SS-16 Sinner: USSR / Successional Countries USSR (RUS/SOV): Strategic Missile Systems (range more than 1000 km)," available at: <<http://en.valka.cz/viewtopic.php/title/SOV-15Z42-Temp-2S-RS-14-SS-16-Sinner/t/21515>>.

¹⁸² *Krasnaya Zvezda*, May 5, 1999.

¹⁸³ *Krasnaya Zvezda*, December 2, 2005.

¹⁸⁴ *Krasnaya Zvezda*, July 12, 2007

¹⁸⁵ "RT-21 Temp 2S," available at: <http://www.file:///J:/News%202011/SS-16/RT-21_Temp_2S.htm>.

¹⁸⁶ "Case Study: SS-23 Missiles in Eastern Europe," U.S. Department of State Fact Sheet, October 1, 2005, available at: <<http://2001-2009.state.gov/t/vci/rls/prsr/57238.htm>>.

- ¹⁸⁷ "Supplemental Report to the Congress on SS-23 Missiles in Eastern Europe," Arms Control and Disarmament Agency, September 18, 1991, p. 2.
- ¹⁸⁸ "Adherence to and Compliance with Arms Control, Nonproliferation and Disarmament Agreements and Commitments" The U.S. State Department, August 2005, available at: <<http://www.state.gov/documents/organization/52113.pdf>>.
- ¹⁸⁹ "New START: Potemkin Village Verification," op cit.
- ¹⁹⁰ "CAST Director Ruslan Pukhov Comments on START III Implementation," *RIA Novosti*, April 7, 2011, available at: <CAST Director Ruslan Pukhov Comments on START III Implementation,>.
- ¹⁹¹ The New START Treaty, The Protocol, Section 5, paragraph 7.
- ¹⁹² "New START: Potemkin Village Verification," op. cit.
- ¹⁹³ Matthew Moore, Gordon Rayner, and Christopher Hope, "WikiLeaks Cables: US Agrees to Tell Russia Britain's Nuclear Secrets," available at: <<http://www.telegraph.co.uk/news/worldnews/wikileaks/8304654/WikiLeaks-cables-US-agrees-to-tell-Russia-Britains-nuclear-secrets.html>>.
- ¹⁹⁴ Ibid.
- ¹⁹⁵ Podvig, "Where is the New START Data?" op. cit.
- ¹⁹⁶ The New START Treaty, Article VII, paragraph 5.
- ¹⁹⁷ Hans M. Kristensen, "New START Data Exchange: Will it Increase or Decrease International Nuclear Transparency?," Federation of American Scientists, available at: <<http://www.fas.org/blog/ssp/2011/03/startexchange.php>>.
- ¹⁹⁸ "Remarks by Rose Gottemoeller Assistant Secretary, Bureau of Verification, Compliance, and Implementation Remarks at National Defense University, Center for the Study of Weapons of Mass Destruction 10th Annual Symposium Washington, DC May 5, 2010," available at: <<http://www.state.gov/t/avc/rls/141612.htm>>.
- ¹⁹⁹ The New START Treaty, Article VII, paragraph 7.
- ²⁰⁰ "Some New START data released," June 2011, available at: <http://russianforces.org/blog/2011/06/some_new_start_data_released.shtml>.
- ²⁰¹ The New START Treaty, Article VII, paragraph 5.
- ²⁰² "Figures On Russian Strategic Arms Need Not Be In Public Domain - Top Diplomat," *Interfax*, February 7, 2011, available at: <<http://www.accessmylibrary.com/article-1G1-248647214/figures-russian-strategic-arms.html>>.
- ²⁰³ "No Need to Disclose Russian Nuclear Forces' Data - Foreign Ministry," *Interfax*, February 7, 2011, available at: <<http://www.cdi.org/russia/johnson/russia-nuclear-forces-data-disclosure-feb-321.cfm>>.
- ²⁰⁴ Fred Charles Iklé, "After Detection –What?," *Foreign Affairs* 39, January 1961, p. 2078.
- ²⁰⁵ Malcolm Wallop, "Soviet Violations of Arms Control Agreements: So What?" *Strategic Review*, Summer 1983, p. 15.
- ²⁰⁶ *Principal Findings on the Capabilities of the United States to Monitor the SALT II Treaty: Report of the Senate Select Committee on Intelligence, United States Senate*, October 1979, pp. 4-5, available at: <<http://www.intelligence.senate.gov/pdfs/96salt.pdf>>.
- ²⁰⁷ Quoted in David Sullivan, *The Bitter Fruit of SALT*, Houston: The Policy Institute, 1982, p. 76.
- ²⁰⁸ Mark B. Schneider, "Intelligence on the Formulation of Defense Policy," in Roy Godson ed., *Intelligence Requirements in the 1980s – Intelligence and Policy*, Lexington Mass.: D.C Heath, 1986, p.63.
- ²⁰⁹ Wallop, "Soviet Violations of Arms Control Agreements: So What?," op. cit. p. 14.
- ²¹⁰ *Adherence to and Compliance with Arms Control and Nonproliferation Agreements and Commitments*, July 2010, p. 5, available at: <<http://www.state.gov/documents/organization/145181.pdf>>.
- ²¹¹ Ibid. pp. 8-9.

²¹² "The New START Treaty (Treaty Doc 111-5), Hearings Before the Committee on Foreign Relations, United States Senate 111th Congress, Second Session, April 29, May 18, 19, 25, June 10, 15, 16, 24, and July 15, 2010, op. cit. p. 262.

²¹³ "The New START Treaty," available at: <<http://www.state.gov/documents/organization/190089.pdf>>.

²¹⁴ "New START Treaty does not restrict Russia in developing its nuclear forces – chief of staff," *Interfax*, February 17, 2012, available at: <<http://www.interfax.co.uk/russia-cis-general-news-bulletins-in-english/new-start-treaty-does-not-restrict-russia-in-developing-its-nuclear-forces-chief-of-staff/>>.

²¹⁵ *Gazeta Online*, March 26, 2010.

²¹⁶ *ITAR-TASS*, July 4, 2009; *Nakanunye*, July 3, 2009; *Kommersant Online*, July 3, 2009; *Kommersant Online*, July 7, 2009.

²¹⁷ Podvig, "The New START bomber count and upload potential," op. cit.

²¹⁸ "Tactical nuclear arms cuts could be discussed after New START is implemented – Lavrov," *Interfax*, December 24, 2010, available at: <<http://www.interfax.com/newsinf.asp?y=2009&m=11&d=2&pg=9&id=211854>>.

²¹⁹ "Russia says too early to talk tactical nuclear weapons with United States," *RIA Novosti*, January 29, 2011, available at: <http://www.en.rian.ru/military_news/20110129/162362622.html>.

²²⁰ "Ivanov calls for Russia-U.S. talks on tactical weapons reduction," *Interfax*, February 5, 2011, available at: <<http://www.interfax.com/newsinf.asp?id=220387February 07, 2011 14:28>>.

²²¹ *Rossiyskaya Gazeta Online*, May 18, 2011.

²²² Charles Krauthammer, "Plumage — But at a Price," *The National Review Online*, July 10, 2009, available at: <<http://www.nationalreview.com/articles/227859/plumage-mdash-price/charles-krauthammer>>.

²²³ Richard Perle and Kim R. Holmes, "On Arms Control, Learn from Reagan," *NBC News*, December 21, 2010, available at: <<http://www.cbsnews.com/stories/2010/12/20/opinion/main7169990.shtml?tag=contentMain;contentBody>>.

²²⁴ "Joint Understanding," The White House, July 8, 2009, available at: <<http://www.whitehouse.gov/the-press-office/joint-understanding-start-follow-treaty>>.

²²⁵ *Ekho Moskvyy Radio*, July 3, 2009.

²²⁶ "Obama interview with Novaya Gazeta," The White House, July 6, 2009, available at: <http://www.whitehouse.gov/the_press_office/Transcript-of-President-Obamas-Interview-with-Novaya-Gazeta/>.

²²⁷ *Novaya Gazeta*, June 24, 2009.

²²⁸ *Kommersant*, October 30, 2009.

²²⁹ Douglas Feith and Abram N. Shulsky, "Why Revive the Cold War?," *Wall Street Journal*, August 18, 2009, available at: <<http://www.online.wsj.com/article/SB10001424052970204313604574328430978849134.html>>.

²³⁰ "'Mutual Deterrence' Speech by Sec. of Defense Robert McNamara, San Francisco, September 18, 1967," available at: <<http://www.atomicarchive.com/Docs/Deterrence/Deterrence.shtml>>.

²³¹ Richard Perle, "The Arms Race Myth, Again," March 3, 2011, available at: <<http://www.hutchnews.com/Columns/arms>>.

²³² Keith B. Payne, "Action-Reaction Metaphysics and Negligence," *The Washington Quarterly*, Autumn 2001, p. 110.

²³³ *Ibid.*, p. 114.

²³⁴ "Remarks by President Barack Obama, Hradcany Square Prague, Czech Republic," April 5, 2009, available at: <<http://www.whitehouse.gov/the-press-office/remarks-president-barack-obama-prague-delivered>>.

²³⁵ The 2010 Nuclear Posture Review, op. cit. pp. v-vi.

²³⁶ Gates, "Carnegie Endowment for International Peace (Washington, D.C.)," op. cit.

²³⁷ Feith and Shulsky, "Why Revive the Cold War?" op. cit.

²³⁸ Desmond Butler, "Promises, Promises," *Associated Press*, April 5, 2011, available at: <http://yahoo.com/s/ap/201105/ap_on_re_us/us_obama_nuclear_pledges>.

²³⁹ *Interfax-AVN Online*, June 5, 2009.

²⁴⁰ *ITAR-TASS*, April 22, 2009.

²⁴¹ Pavel Felgenhauer, "Russia Will Retain as Many Nuclear Weapons as possible," The Jamestown Foundation, April 9, 2009, available at: <[http://www.jamestown.org/programs/edm/single/?tx_ttnews\[tt_news\]=34834&tx_ttnews\[backPid\]=27&cHash=addbf5c3ae](http://www.jamestown.org/programs/edm/single/?tx_ttnews[tt_news]=34834&tx_ttnews[backPid]=27&cHash=addbf5c3ae)>.

²⁴² Robert D. Walpole, "Foreign Missile Developments and the Ballistic Missile Threat," September 16, 1999, available at: <<https://www.cia.gov/news-information/speeches-testimony/1999/walpole.htm>>.

²⁴³ The 2010 Nuclear Posture Review," op. cit. pp. iv and xiii.

²⁴⁴ *Ibid.*, p. x.

²⁴⁵ National Security and Nuclear Weapons in the 21st Century, Washington D.C.: U.S. Department of Energy and U.S. Department of Defense, September 2008, p. 8, available at: <<http://www.aps.org/policy/reports/popa-reports/upload/nuclear-weapons.pdf>>.

²⁴⁶ "Draft Russian Military Doctrine," *BBC Worldwide Monitoring*, October 11, 1999, available at: <<http://www.fas.org/nuke/guide/russia/doctrine/991009-draft-doctrine.htm>>.

²⁴⁷ "Russia to broaden nuclear strike options," *Russia Today*, October 14, 2009, available at: <<http://rt.com/news/russia-broaden-nuclear-strike/>>.

²⁴⁸ Schneider, "The Future of the U.S. Nuclear Deterrent," op. cit., p. 349.

²⁴⁹ *Ibid.*

²⁵⁰ *WebDigest.RU*, May 3, 2007.

²⁵¹ Schneider, "The Future of the U.S. Nuclear Deterrent," op. cit. p. 349.

²⁵² McElroy, "Russian general says Poland a nuclear 'target'," op. cit.

²⁵³ *Die Zeit*, May 8, 2008.

²⁵⁴ Maria Danilova, "Russia Warns U.S. on Missile Defense," *The Washington Post*, June 3, 2007, available at: <<http://www.washingtonpost.com/wp-dyn/content/article/2007/06/03/AR2007060300463.html>>.

²⁵⁵ Peter Finn, "Putin Threatens Ukraine On NATO," *The Washington Post*, February 13, 2008, available at: <<http://www.washingtonpost.com/wp-dyn/content/article/2008/02/12/AR2008021201658.html>>.

²⁵⁶ "Putin threatens to retarget missiles," *UPI*, February 14, 2012, available at: <http://www.upi.com/Top_News/2008/02/15/Putin-threatens-to-retarget-missiles/UPI-76031203057018/>.

²⁵⁷ "Russia Could Aim Rockets at European Missile Shield – Putin" RIA Novosti, February 14, 2008, available at: <<http://en.rian.ru/russia/20080214/99201375.html>>.

²⁵⁸ Schneider, "The Future of the U.S. Nuclear Deterrent," op. cit. p. 349.; Damien McElroy and Adrian Bloomfield, "Putin: US risking new Cuban missile crisis," London: *Daily Telegraph*, October 28, 2007, available at: <<http://www.telegraph.co.uk/news/main.jhtml?xml=/news/2007/10/27/wputin127.xml>>.

²⁵⁹ Sam Greenhill, "Pictured: The moment RAF jets intercepted Russian bombers flying in British airspace," *The Daily Mail*, March 24, 2010, available at: <<http://www.dailymail.co.uk/news/article-1260381/RAF-jets-intercept-Russian-bombers-flying-British-airspace.html>>.

²⁶⁰ Luis Martinez, "Russian Planes Overfly U.S. Carrier," *ABC News*, March 18, 2009, available at: <<http://www.blogs.abcnews.com/politicalradar/2009/03/russian-planes.html>>.

²⁶¹ "Address to the Federal Assembly of the Russian Federation," November 5, 2008, available at: <<http://www.eng.kremlin.ru/transcripts/296>>.

²⁶² "Russia to hold military exercise before Obama arrival," *Russia Today*, June 29, 2009, available at: <<http://rt.com/news/russia-to-hold-military-exercise-before-obama-arrival/>>.

²⁶³ "Defense Officials: Russian Subs Patrolling off East Coast of United States," *Fox News*, August 4, 2009, available at: <<http://www.foxnews.com/politics/2009/08/04/defense-officials-russian-subs-patrolling-east-coast-united-states/>>.

²⁶⁴ *Interfax*, October 9, 2009.

²⁶⁵ "Russia's new military doctrine allows pre-emptive nuclear strikes," *RIA Novosti*, October 13, 2009, available at: <<http://en.rian.ru/russia/20091014/156461160.html>>.: "Russia Amending Its Military Doctrine Towards Freer Use Of Nukes," Moscow *ITAR-TASS*, October 9, 2009, available at: <<http://www.infopig.com/news/10-12-2009.html>>.

²⁶⁶ "Remarks with Russian Foreign Minister Sergey Lavrov," U.S. Department of State, October 13, 2009, available at: <<http://www.state.gov/secretary/rm/2009a/10/130505.htm>>.

²⁶⁷ Matthew Day, "Russia 'simulates' nuclear attack against Poland," *Daily Telegraph*, November 1, 2009, available: <<http://www.telegraph.co.uk/news/worldnews/europe/poland/6480227/Russia-simulates-nuclear-attack-on-Poland.html>>.

²⁶⁸ "Russian Strategic Missile Troops chief says 'preventive strikes' possible," *Interfax*, December 16, 2009, available at: <<http://www.accessmylibrary.com/article-1G1-215196953/russian-strategic-missile-troops.html>>. Hickley, Greenhill and Laker, "Russia threatens nuclear strike on Poland as Cameron demands withdrawal from Georgia," op. cit.

²⁶⁹ "Russian Strategic Missile Troops chief says 'preventive strikes' possible," op. cit.

²⁷⁰ The 2010 Nuclear Posture Review, op. cit. p. xi.

²⁷¹ "Strategic missile force to be reduced somewhat by 2016 – commander," *ITAR-TASS*, May 5, 2010, available at: <<http://www.itar-tass.com/eng/level2.html?NewsID=13915075&PageNum=0>>.

²⁷² *Novaya Gazeta*, June 24, 2009.

²⁷³ Keith Payne and Thomas Scheber, "The Threat of New START," *National Review on Line*, November 16, 2009, available at: <<http://www.nationalreview.com/articles/253245/threat-new-start-keith-b-payne?page=2>>.

²⁷⁴ Pavel Felgenhauer, "The US Threat Dominates Russian Defense Spending and Foreign Policy Decisions," *Eurasia Daily Monitor*, Volume: 8 Issue: 29, available at: <[http://www.jamestown.org/single/?no_cache=1&tx_ttnews\[tt_news\]=37491&tx_ttnews\[backPid\]=7&cHash=ac5ad57afc46caa15c0c6cd9fb33315fz](http://www.jamestown.org/single/?no_cache=1&tx_ttnews[tt_news]=37491&tx_ttnews[backPid]=7&cHash=ac5ad57afc46caa15c0c6cd9fb33315fz)>.

²⁷⁵ "Statement of the Honorable Douglas J. Feith Undersecretary of Defense for Policy Senate Armed Services Hearing on the Nuclear Posture Review February 14, 2002," available at: <<http://www.armed-services.senate.gov/statemnt/2002/feith.pdf>>.

²⁷⁶ John Bolton, "Is Russia pushing Obama's buttons?" *The Globe and Mail*, July 7, 2009, available at: <<http://www.theglobeandmail.com/news/opinions/is-russia-pushing-obamas-buttons/article1209803/>>.

²⁷⁷ "Top MP, senator reflect on achievements of 'reset' in Russian-US ties," *RIA Novosti*, March 4, 2011, available at: <<http://www.accessmylibrary.com/article-1G1-281100289/fedfactbox-rudd-and-gillard.html>>.

²⁷⁸ "Resetting the Stage: An assessment of America's 'reset' with Russia suggests that it was a modest policy that has produced modest achievements," *The Economist*, April 20, 2011, available at: <http://www.economist.com/node/1858694?story_id=1858694&fsrc=rss>.

²⁷⁹ Ted R. Bromund, "The Unrealism of the Russian Reset," *Commentary Magazine*, March 8, 2011, available at: <<http://www.commentarymagazine.com/2011/03/08/the-unrealism-of-the-russian-reset/>>.

²⁸⁰ Leon Aron, "The Button and the Bear," *American Enterprise Institute*, July 2009, available at: <<http://www.aei.org/outlook/100055>>.

²⁸¹ "The Reset 2 Years On," *Moscow Times*, March 10, 2011, available at: <<http://www.themoscowtimes.com/opinion/article/the-reset-2-years-on/432284.html>>.

²⁸² Ibid.

²⁸³ Lehman II, "The Arms Control Legacy of The Reagan Administration: A Focus On START," op. cit. p. 15.

²⁸⁴ "Desmond Butler, "U.S. reviewing nuclear arsenal with eye to new cuts," *Associated Press*, March 23, 2011, available at: <http://www.washingtontimes.com/news/2011/mar/23/us-reviewing-nuclear-arsenal-eye-new-cuts/?utm_source=RSS_Feed&utm_medium=RSS>.

²⁸⁵ "Joint Statement by Dmitriy A. Medvedev, President of the Russian Federation, and Barack Obama, President of the United States of America, Regarding Negotiations on Further Reductions in Strategic Offensive Arm," The White House, April 1, 2009, available at: <http://www.whitehouse.gov/the_press_office/Joint-Statement-by-Dmitriy-A-Medvedev-and-Barack-Obama/>.

²⁸⁶ Ibid.

-
- ²⁸⁷ *Ekho Moskvyy Radio*, March 28, 2009.
- ²⁸⁸ Douglas J. Feith, "Groundhog Day on U.S.-Russia Arms Control," *The Wall Street Journal*, December 13, 2010, available at: <<http://online.wsj.com/article/SB10001424052748703380104576015453439730390.html>>.
- ²⁸⁹ Peter Spiegel, "Biden Says Weakened Russia Will Bend to U.S.," *Wall Street Journal*, July 25, 2009, available at: <<http://online.wsj.com/article/SB124848246032580581.html>>.
- ²⁹⁰ *Moscow Novaya Gazeta*, May 29, 2009.
- ²⁹¹ "Russian deputy FM: Obama administration shows signs of easing position on strategic arms," *Interfax*, May 26, 2009, available at: <<http://www.interfax.com/interview.asp?id=98885>>.
- ²⁹² "Do not expect massive strategic offensive reductions - Russian diplomat," *Interfax*, April 21, 2009, available at: <<http://www.accessmylibrary.com/article-1G1-198273390/do-not-expect-massive.html>>.
- ²⁹³ Vitaly An'kov, "Only 8 Russian strategic submarines are combat-ready – analyst," *RIA Novosti*, January 6, 2009, available at: <<http://en.rian.ru/russia/20090601/155137755.html>>.
- ²⁹⁴ "Russia not to remove from arsenal missiles with unspent service life – commander," *Interfax-AVN Online*, May 7, 2009, available at: <<http://www.accessmylibrary.com/article-1G1-199241555/russia-not-remove-arsenal.html>>.
- ²⁹⁵ Aleksei Arbatov and Vladimir Dvorkin *The New Treaty on Strategic Offensive Arms: One Step in the Right Direction*, Carnegie Moscow Center Briefing, Vol. 12, Issue 2 (June 2010), p. 4, available at: <http://Carnegieendowment.org/files/ArbatovBriefing_12-2-10_Eng_web_2.pdf>.
- ²⁹⁶ *Principal Findings on the Capabilities of the United States to Monitor the SALT II Treaty—Report of the Senate Select Committee on Intelligence, United States Senate* October 1979, op. cit., pp. 3-4.
- ²⁹⁷ "The Select Committee Investigative Record," *The Village Voice*, February 16, 1978, p. 92.
- ²⁹⁸ Melvin R. Laird, "Arms Control: The Russians Are Cheating!" *Reader's Digest*, December 1977, p. 98.
- ²⁹⁹ Elmo R. Zumwalt, Jr. and Worth Bagley, "The Soviets Cheat And We Turn Our Backs," *The Washington Star*, August 10, 1975, p. c-1.
- ³⁰⁰ *Soviet Noncompliance with Arm Control Agreements, Special Report 136*, Washington D.C.: U.S. Department of State, December 1985, p. 2. Also see *Soviet Noncompliance*, Washington D.C.: The U.S. Arms Control and Disarmament Agency, February 1, 1986.
- ³⁰¹ "Shevardnadze Addresses Supreme Soviet, Moscow Domestic Service," October 23, 1989.: and "Yeniseysk (Krasnoyarsk)," Global Security Organization, available at: <<http://www.globalsecurity.org/wmd/world/russia/yeniseysk.htm>>.: "Anti-Ballistic Missile Treaty Chronology," Federation of American Scientists, available at: <<http://www.fas.org/nuke/control/abmt/chron.htm>>.
- ³⁰² Russel Dybvik, "Russia Commits to End Biological Weapons Program," September 14, 1992, available at: <<http://www.fas.org/nuke/control/bwc/news/920914-242819.htm>>.
- ³⁰³ Sven F. Kraemer, "The Krasnoyarsk Saga," *Strategic Review*, Winter 1990, pp. 27, 29.
- ³⁰⁴ Ronald Reagan, "Remarks in New York, New York, Before the United Nations General Assembly Special Session Devoted to Disarmament," June 17, 1982, available at: <<http://www.reagan.utexas.edu/archives/speeches/1982/61782a.htm>>.
- ³⁰⁵ *The President's Unclassified Report To The Congress on Soviet Noncompliance With Arms Control Agreements*, Washington D.C.: The White House, February 1, 1985, p. 6.
- ³⁰⁶ *Soviet Non-Compliance with Arms Control Agreements*, December 1985, op. cit. p. 3.
- ³⁰⁷ *START Treaty Between the United States of America and the Union of Soviet Socialist Republics on the Reduction and Limitation of Strategic Offensive Arms Signed in Moscow July 31, 1991*, op. cit. pp.120, 208-209.
- ³⁰⁸ *Adherence To and Compliance With Arms Control Agreements, 1996 Report submitted to the Congress*, Washington, D.C., 1996, available at: <<http://www.state.gov/www/global/arms/reports/annual/comp.html>>.
- ³⁰⁹ *Adherence To And Compliance With Arms Control Agreements*, Washington D.C.: The U.S. Arms Control and Disarmament Agency, May 30, 1995, p. 7.

³¹⁰ The content of conformed letters are negotiated and then subject to detailed linguistic review so that the Russian and the English versions have the same meaning. Conformed letter are sometimes used to record certain types of agreement on arms control obligations.

³¹¹ Letter from Ambassador Steven E. Steiner to Ambassador Mikhail N. Strel'tsov, Geneva, Switzerland, October 6, 1994. Unclassified.

³¹² *Adherence To and Compliance With Arms Control Agreements*, 1998 Report submitted to the Congress, Washington, D.C., available at: <<http://www.state.gov/www/global/arms/reports/annual/comp98.html>>.

³¹³ "Intermediate-Range and Shorter-Range Nuclear Forces (INF) Treaty Text," Inspection Protocol, section XI, paragraph 14(c). Letter from Ambassador Steve Steiner to Ambassador Mikhail N. Strel'tsov, op. cit.

³¹⁴ *Novaya Gazeta*, June 4, 2007.

³¹⁵ Podvig, "Solomonov confirms that RS-24 is MIRVed Topol-M," op. cit.

³¹⁶ "Russia's missile forces to replace Topol-M with multiple-warhead RS-24," *RIA Novosti*, November 30, 2010, available at: <http://defenseblog-njs.blogspot.com/2010_11_01_archive.html>.

³¹⁷ "National Security and Nuclear Weapons in the 21st Century," op. cit. p. 7.

³¹⁸ Pavel Felgenhauer, "Moscow Discusses the Future Development of ICBMs," *Eurasia Daily Monitor*, Volume 8 Issue 9, January 13, 2011, available at: <[http://www.jamestown.org/programs/edm/single/?tx_ttnews\[tt_news\]=37354&cHash=2df1c6d9cbd](http://www.jamestown.org/programs/edm/single/?tx_ttnews[tt_news]=37354&cHash=2df1c6d9cbd) disarmament>.

³¹⁹ "Russian Officials Tout Iskander MIRV As 21st Century ABM Buster," *RIA Novosti*, May 30, 2007, available at: <http://www.spacewar.com/reports/Russian_Officials_Tout_Iskander_MIRV>.

³²⁰ *SALT I Reconsidered—The Debate Over Ratification of the SALT I Treaty and Its Relevance Today*, Washington D.C.: Institute of American Relations, 1979, p. 34

³²¹ Congressional Budget Office, *SALT and the U.S. Strategic Forces Budget*, Washington D.C.: Government Printing Office, 1976, p. 8.

³²² Zumwalt and Bagley, "The Soviets Cheat And We Turn Our Backs," op. cit. p. c-1.

³²³ *SALT I Reconsidered—The Debate Over Ratification of the SALT I Treaty and Its Relevance Today*, op. cit. p. 21.

³²⁴ *Ibid.*, p. 120.

³²⁵ John Newhouse, *Cold Dawn*, New York: Prentice Hall, 1973, p. 177.

³²⁶ William R. Van Cleave, "SALT on the Eagle's Tail," *Strategic Review*, Spring 1976, p. 45.

³²⁷ *The Secretary of State Press Conference*, December 9, 1975, Washington D.C.: U.S. Department of State, 1975, p. 5.

³²⁸ William Schneider, Jr., "The Road to Geneva," *Strategic Review*, Fall 1985, p. 28.

³²⁹ Patrick Glynn, "Reagan Rush to Disarm," *Commentary*, March 1988, p. 24.

³³⁰ Richard Perle, "Arms Control & The Soviets: A History of Violations," *Defense*, May 1985, p. 11.

³³¹ *Soviet Military Power 1987*, Washington D.C.: U.S. Department of Defense, 1987, p. 3.

³³² "Most Powerful Strategic RS-20 to Remain In Inventory - Kommersant Moscow," *Kommersant.com*, July 29, 2008, available at: <http://www.kommersant.com/p-12927/r_500/RS-20_inventory/>.

³³³ Letter of Senator Jesse Helms to The Honorable Steven Steiner, April 23, 1998.

³³⁴ "Fact Sheet: START I Aggregate Numbers of Strategic Offensive Arms," Washington D.C.: The Arms Control and Disarmament Agency, April 2, 1996, p. 5: and "Fact Sheet: START I Aggregate Numbers of Strategic Offensive Forces," Washington D.C.: The Arms Control and Disarmament Agency, October 1, 1999, p. 5.

³³⁵ "President George Bush The White House Friday, September 27, 1991 – 8:00 p.m.," p. 2.

³³⁶ "Secretary of Defense Dick Cheney, General Colin Power, Chairman, JCS, Pete Wilson, ASD (Public Affairs) Saturday 28, 1991 -10:00a.m.," pp. 2-3.

³³⁷ "Text of the Gorbachev Reply To President's Nuclear Initiative," Moscow 28671, unclassified.

-
- ³³⁸ "Yeltsin Makes Statement on Disarmament," January 29, 1992, unclassified.
- ³³⁹ "Press Roundtable at Interfax - Stephen G. Rademaker, Assistant Secretary of State for Arms Control, Moscow, Russia, October 6, 2004," available at: <<http://2001-2009.state.gov/t/isn/rls/rm/37275.htm>>.
- ³⁴⁰ *Rodnaya Gazeta*, November 14, 2008.
- ³⁴¹ *Voyenno-Promyshlennyy Kuryer*, November 19, 2003.
- ³⁴² Schneider, *The Nuclear Forces and Doctrine of the Russian Federation*, op. cit., p. 17.
- ³⁴³ Schneider, *The Future of the U.S. Nuclear Deterrent*, op. cit. p. 348.
- ³⁴⁴ Ruchkin, "In a Broad Context," op. cit.
- ³⁴⁵ "Washington presses Moscow to begin non-strategic nuclear weapons reduction," *Gazeta.ru, Vedomosti*, February 10, 2010, available at: <<http://en.rian.ru/papers/20100205/157782788.html>>.
- ³⁴⁶ *Vremya Novostey*, September 7, 2007.
- ³⁴⁷ *Ekho Moskvyy Radio*, December 14, 2010. "Non-Strategic Nuclear Weapons - Problem of Control and Reduction," Center for Arms Control, Energy and Environmental Studies Moscow Institute of Physics and Technology, 2004, pp. 15, 17.; Nikolay Poroskov, "NATO's Eastward Expansion Prompting Review of Russian Nuclear Strategy," *Moscow Vremya Novostey*, July 7, 2004.
- ³⁴⁸ *Nezavisimoye Voyennoye Obozreniye Online*, May 20, 2011.
- ³⁴⁹ "Russia expands production of precision guided weapons," *RIA Novosti*, February 2, 2009, available at: <<http://en.rian.ru/russia/20090211/120090354.html>>. : *Nezavisimoye Voyennoye Obozreniye*, January 21, 2005. : "Russian experts praise Medvedev's moves against US missile shield," *Interfax-AVN Online*, November 5, 2008, available at: <<http://www.accessmylibrary.com/article-1G1-188575274/russian-experts-praise-medvedev.html>>.; *Izvestiya*, May 6, 2009; Aleksey Arbatov, "Moscow *Voyenno-Promyshlennyy Kuryer Online*, May 5, 2010.
- ³⁵⁰ All Russian Research Institute of Experimental Physics, Russian Federal Nuclear Center, Sarov, 2006, p. 59.
- ³⁵¹ Moscow *ITAR-TASS*, November 9, 2009. Moscow *Nezavisimoye Voyennoye Obozreniye*, October 2, 2009. ; *ITAR-TASS*, January 8, 2010.
- ³⁵² *Khabarovsk Suvorovskiy Natisk*, July 10, 2010.
- ³⁵³ "New START: Increasing the Risk of Nuclear War," Heritage Foundation, August 11, 2010, available at: <<http://blog.heritage.org/2010/08/11/new-start-increasing-the-risk-of-nuclear-war/>>.
- ³⁵⁴ *Voyenno-Promyshlennyy Kuryer Online*, July 14, 2010.
- ³⁵⁵ Lastochkin, "Moscow keeps tactical nuclear weapons cuts issue low-key - Russian senator," op. cit.
- ³⁵⁶ *Krasnaya Zvezda*, September 4, 2009.
- ³⁵⁷ Walter Pincus, "Russia Moving Nuclear Arms to Baltic Sea Base / Possible reaction to NATO expansion," *Washington Post*, January 4, 2001, available at: <http://articles.sfgate.com/2001-01-04/news/17579040_1_nuclear-free-zone-nuclear-weapons-nuclear-warheads>.
- ³⁵⁸ *Nezavisimoye Voyennoye Obozreniye*, January 21, 2005.
- ³⁵⁹ Carl Bildt and Radek Sikorski, "Next, the Tactical Nukes," *New York Times*, February 1, 2010 , available at: <<http://www.nytimes.com/2010/02/02/opinion/02iht-edbildt.html>>. : "Lithuania claims Russia deployed warheads near border," *AFP*, February 8, 2011, available at: <http://www.spacedaily.com/reports/Lithuania_claims_Russia_deployed_warheads_near_border_999.html>.
- ³⁶⁰ *Nowe Panstwo (Internet Version-WWW)*, January 12, 2001.
- ³⁶¹ 2010 Nuclear Posture Review, op. p. xiii.
- ³⁶² Schneider, *The Nuclear Forces and Doctrine of the Russian Federation*, op. cit. p. 16.
- ³⁶³ "Ivanov Comment Suggests Moscow Ignoring Nuclear Weapons Agreement with Washington," *Eurasia Daily Monitor*, Volume: 3 Issue: 168, September 12, 2006, available at: <[http://www.jamestown.org/programs/edm/single/?tx_ttnews\[tt_news\]=32031&tx_ttnews\[backPid\]=177&no_cache=1](http://www.jamestown.org/programs/edm/single/?tx_ttnews[tt_news]=32031&tx_ttnews[backPid]=177&no_cache=1)>.

-
- ³⁶⁴ "English Transcript of Excerpt from TV2 Interview with Grigoriy Tomchin," *CNS report*, available at: <http://cns.miis.edu/archive/rus_sub/tomchin.htm>.
- ³⁶⁵ *Interfax*, April 5, 2001.
- ³⁶⁶ Patrick Goodenough, "Russia Rejects Claim That Kursk Was Carrying Nuclear Weapons," *CNNNews.com*, July 7, 2008, available at: <<http://www.cnnnews.com/node/10180>>.
- ³⁶⁷ Alexei Smirnov, "What Really Happened to the Kursk?" *Novye Izvestia*, April 6, 2001, p. 3, available at: <<http://www.wps.ru/en/pp/kursk/2001/04/06/3.html>>.
- ³⁶⁸ Pavel Felgengauer, "The Kursk: 22 Guided Missiles Granit for Sinking American Aircraft-Carriers are the Worst Headache," *Moskovskie Novosti*, No 31, July-August, 2001, p. 5, available at: <<http://www.wps.ru/en/pp/kursk/2001/07/31/1.htmlZ>>.
- ³⁶⁹ *Krasnaya Zvezda Online*, May 21, 2010.
- ³⁷⁰ *Rossiyskoye Voennoye Obozreniye*, August 31, 2007.
- ³⁷¹ *Nezavisimaya Gazeta*, April 4, 2003.
- ³⁷² *Kommersant-Vlast*, August 25, 2008. : *Kommersant-Vlast*, April 10, 2010.
- ³⁷³ Stephen J. Blank, *Towards a New Russia Policy*, U.S. Army Strategic Studies Institute, February 2008, p. 44, available at: <<http://www.scribd.com/doc/4871316/TOWARDS-A-NEW-RUSSIA-POLICY>>.
- ³⁷⁴ *Agentstvo Voyennykh Novostey*, February 14, 2006.
- ³⁷⁵ *Nezavisimoye Voennoye Obozreniye Online*, May 13, 2011.
- ³⁷⁶ *Ekho Moskvyy Radio*, December 10, 2010.: "Russia Tests a New Ground-Launched Cruise Missile and a New Strategic Missile on the Same Day," *CNS*, June 1, 2007, (Updated August 1, 2008), available at: <<http://cns.miis.edu/stories/070601.htm>>.
- ³⁷⁷ *Rossiia TV*, June 4, 2007.
- ³⁷⁸ "Russia to compensate for INF losses with Iskander missile system," *RIA Novosti*, November 14, 2007, available at: <<http://en.rian.ru/russia/20071114/88066432.html>>.
- ³⁷⁹ *Nezavisimoye Voennoye Obozreniye*, November 23, 2007.
- ³⁸⁰ *Moskovskiy Novosti*, July 2, 2007.
- ³⁸¹ Mikhail Barabanov, "The Iskander Factor," *Kommersant*, November 9, 2009, available at: <http://www.kommersant.com/p1052937/r_527/Iskander_missiles_to_counterbalance_American_AMD_systems>.: Mikhail Barabanov, "Iskander the Great," *militaryphotos.net*, June 6, 2001, available at: <<http://www.militaryphotos.net/forums/showthread.php?197506-Russian-Armed-Forces-News-amp-Discussion-thread/page29>>.
- ³⁸² Yury Fedorov, "American Ballistic Missile Defence, Russian Iskanders and a New Missile Crisis in Europe," London: Chatham House, May 22, 2009, available at: <<http://www.chathamhouse.org/sites/default/files/public/Research/Russia%20and%20Eurasia/220509summary.pdf>>.
- ³⁸³ "The Iskander Factor," op. cit.: *Kommersant*, February 26, 2010.
- ³⁸⁴ Sergi Balmasov, "Russia shows Iskander missile systems to NATO," *Pravda.ru*, December 17, 2010, available at: <<http://english.pravda.ru/russia/politics/17-12-2010/116249-iskander-0/>>.
- ³⁸⁵ Ilya Kramnik, "The Iskander: a story of a new face-off," *RIA Novosti*, November 19, 2008, available at: <<http://en.rian.ru/analysis/20081110/118218596.html>>.
- ³⁸⁶ Ilya Kramnik, "Missile bargaining: Iskanders for missile defense," *RIA Novosti*, January 9, 2009, available at: <<http://en.rian.ru/analysis/20090129/119877816.html>>.
- ³⁸⁷ The INF Treaty, Article 7, paragraph 4, available at: <<http://www.dod.gov/acq/acic/treaties/inf/text.htm#article4>>.
- ³⁸⁸ *Kommersant Online*, February 26, 2010.
- ³⁸⁹ Dmitry Solvovoy, "Russia may deploy missiles in Belarus: general," November 14, 2007, available at: <<http://www.data.minsk.by/belarusnews/112007/90.html>>.

³⁹⁰ *Suomen Kuvalehti Online*, May 11, 2011.

³⁹¹ Felgenhauer, "Russia Seeks to Impose New ABM Treaty on the US by Developing BMD," op. cit.

³⁹² *The President's Report to the Congress on Soviet Noncompliance with Arms Control Agreements*, Washington D.C.: The White House, January 23, 1984, p. 4.

³⁹³ *Adherence To And Compliance With Arms Control and Disarmament and The President's Report To Congress on Soviet Noncompliance With Arms Control Agreements*, Washington D.C.: The U.S. Arms Control and Disarmament Agency, January 14, 1993, p. 8.

³⁹⁴ *Adherence To and Compliance With Arms Control, Nonproliferation, and Disarmament Agreements and Commitments 2005*, op. cit., p. 14.

³⁹⁵ "The New START Treaty (Treaty Doc. 111–5)," op. cit. p. 262.

³⁹⁶ *America's Strategic Posture - The Final Report of the Congressional Commission on the Strategic Posture of the United States*, op. cit., p. 83.

³⁹⁷ Ramesh Ramachandran, "India Focus on Disarmament as CTBT Debate Revs Up," *The Asian Age Online*, September 13, 2009, available at: <<http://indiarightsonline.com/Sabrang/india9.nsf/b48e4f9eea6303fce5257713005e05d2/d0884a30a437a90f652576c4003bb2d7?OpenDocument>>.

³⁹⁸ *Soviet Noncompliance with Arm Control Agreements, Special Report 136*, op. cit. p. 2. Also see *Soviet Noncompliance*, Washington D.C.: The Arms Control and Disarmament Agency, February 1, 1986.

³⁹⁹ Kenneth Adelman, "Facts Concerning Soviet Charges of US Arms Control Noncompliance," Washington D.C.: Arms Control and Disarmament Agency, April 19, 1984: *Soviet Noncompliance*, Washington D.C.: Arms Control and Disarmament Agency, March 1986, p. 15.; and General Advisory Committee on Arms Control and Disarmament, *A Quarter Century of Soviet Compliance Practices Under Arms Control Commitments: 1958 -1983*. October 1984, p. 5.

⁴⁰⁰ Vitaly V. Adushkin and Iliam Leith, "The Containment of Soviet Underground Nuclear Explosions," Washington D.C.: U.S. Department of Interior, September 2001, p. 34.

⁴⁰¹ Jun Takada et al, "External Doses of Residents near Semipalatinsk Nuclear Test Site," December 28, 1999, p. 346, available at; <http://www.jstage.jst.go.jp/article/jrr/40/4/337/_pdf>. This study said that "two of them were actually accidental surface explosions..."

⁴⁰² Ibid.: also seen Brian Green, "A Flawed Test Ban Treaty," March 27, 1984, available at: <http://www.policyarchive.org/bitstream/handle/10207/9125/87292_1.pdf?sequence=1>.

⁴⁰³ "The Select Committee Investigative Record," op.cit., p. 92.

⁴⁰⁴ *A Quarter Century of Soviet Compliance Practices Under Arms Control Commitments: 1958 -1983*, op. cit. p. 13.

⁴⁰⁵ Roberto Suro, "CIA Is Unable to Precisely Track Testing," October 3, 1999, available at: <<http://www.washingtonpost.com/wp-srv/national/daily/oct99/nuclear3.htm>>.

⁴⁰⁶ "Statement of C. Paul Robinson, Director Sandia National Laboratories United States Senate Committee on Armed Services October 7, 1999," p. 9, available at: <<http://armed-services.senate.gov/statemnt/1999/991007pr.pdf>>.

⁴⁰⁷ *USSR Nuclear Tests, Hydronuclear Experiments. Plutonium Inventory*, Russian Ministry of Nuclear Energy, 1998, p. 4, available at: <http://npc.sarov.u/english/issues/peaceful/peaceful_e.pdf>.

⁴⁰⁸ Vitaly I. Khalturin, Tatyana G. Rautian, Paul G. Richards and William S. Leith, "A Review of Nuclear Testing by the Soviet Union at Novaya Zemlya, 1955—1990," *Science and Global Security*, 13:1–42, 2005, p. 28, available at: <http://www.princeton.edu/~globsec/publications/pdf/13_1-2khalturin%20NZ%201-42%20.pdf>.

⁴⁰⁹ Khalturin, Rautian, Richards and Leith, "A Review of Nuclear Testing by the Soviet Union at Novaya Zemlya, 1955—1990," op. cit. p. 28.

⁴¹⁰ Schneider, "The Future of the U.S. Nuclear Deterrent," op. cit., p. 349.: The Russian view of the value of hydronuclear tests differs significantly from the U.S.: "They can contribute essentially nothing to the design of new boosted weapons, nor can they give an adequate assessment of the performance of stockpile primaries when serious questions arise." See Thorn and Westervelt, *Hydronuclear experiments*, op. cit., p. 7. Mikhaylov repeated this claim in 2001. This raises the issue of whether these tests are really low yield nuclear tests.

⁴¹¹ Schneider, *The Nuclear Forces and Doctrine of the Russian Federation*, op. cit., p. 18.

⁴¹² Schneider, "The Future of the U.S. Nuclear Deterrent," op. cit., p. 349.

⁴¹³ "Russia: Mikhaylov Pressing for Hydronuclear Experiments," Senior Intelligence Brief, May 4, 1999, available at: <<http://www.gwu.edu/nsarchiv/NSAEBB/NSAEBB200/19990504.pdf>>.

⁴¹⁴ "Russia: Developing New Nuclear Warheads at Novaya Zemlya," Office of Russian and European Analysis, Central Intelligence Agency, July 2, 1999, p. 7, available at: <<http://www.gwu.edu/nsarchiv/NSAEBB/NSAEBB200/index.htm>>.

⁴¹⁵ William J. Broad and Patrick E. Tyler, "Russian compliance with nuclear test ban stirs U.S. skepticism," *New York Times*, March 4, 2001, available at: <<http://nucnews.net/nucnews/2001nn/0103nn/010304nn.htm>>. The Department of State has a history of refusing to accept evidence of noncompliance with arms control agreements. See John Bolton, "On Korea," *The National Interest*, November-December 2008, p. 26.

⁴¹⁶ Michael Jasinski, Cristina Chuen, Charles Ferguson, "Renewed U.S. - Russian Controversy Over Nuclear Testing," available at: <<http://cns.miis.edu/stories/020527.htm>>.

⁴¹⁷ *ITAR-TASS*, July 26, 2006.

⁴¹⁸ Schneider, *The Nuclear Forces and Doctrine of the Russian Federation*, op. cit., p. 18. Also see "Nuclear Weapon Testing," Federation of American Scientists, January 9, 2000, available at: <<http://www.fas.org/nuke/intro/nuke/test.htm>>.

⁴¹⁹ Richard Garwin, "The Future of Nuclear Weapons Without Nuclear Testing," *Arms Control Today*, November/December 1997, available at: <http://www.armscontrol.org/act/1997_11-12/garwin>.

⁴²⁰ "Sergei Ivanov visits Novaya Zemlya nuclear testing site," *RIA Novosti*, July 7, 2006, available at: <<http://en.rian.ru/analysis/20060726/51869240.html>>.: Michael Jasinski, Cristina Chuen, Charles Ferguson, "Renewed U.S. - Russian Controversy Over Nuclear Testing," available at: <<http://cns.miis.edu/stories/020527.htm>>.

⁴²¹ Vitaly I. Khalturin, Tatyana G. Rautian, Paul G. Richards and William S. Leith, "A Review of Nuclear Testing by the Soviet Union at Novaya Zemlya, 1955—1990," *Science and Global Security*, 13:1–42, 2005, p. 28, available at: <http://www.princeton.edu/~globsec/publications/pdf/13_1-2khalturin%20NZ%201-42%20.pdf>.

⁴²² Alexei Fenenko, "Russia and the future of the CTBT," *RIA Novosti*, November 3, 2010, available at: <http://en.rian.ru/valdai_op/20101103/161192733.html>.

⁴²³ *Nezavisimoye Voyennoye Obozreniye*, November 19, 2010.

⁴²⁴ "Russia to fulfill new START without eliminating battle-ready missiles – source," *ITAR-TASS*, January 14, 2011, available at: <<http://www.itar-tass.com/eng/level2.html?NewsID=15858274&PageNum=0>>.: "Russia and CIS Digest of headline news as of 7:00 p.m. on January 14, 2011," *Interfax-AVN*, January 14, 2011, available at: <<http://www.interfax.co.uk/russia-and-cis-daily-news-roundups/russia-and-cis-digest-of-headline-news-as-of-700-p-m-moscow-time-on-january-14-2011/>>.

⁴²⁵ "Treaty with Russia on Measures for Further Reduction and Limitation of Strategic Offensive Arms (The New START Treaty), Washington D.C. Senate Foreign Relations Committee, 2010, p. 110-111.

⁴²⁶ "Interview with Aleksey Arbatov, leader of Center for International Security of Russian Academy of Sciences World Economy and International Relations Institute, by Yuliya Krivoshapko," *Izvestiya*, January 26, 2011, available at: <<http://wnc.dialog.com/>>.

⁴²⁷ Dmitriy Litovkin, "Army Awaits Fifth-Generation Missiles," *Izvestiya*, May 13, 2011, available at: <<http://www.accessmylibrary.com/article-1G1-257426827/russian-paper-views-plans.html>>.

⁴²⁸ "Commander notes current, future Russian ICBMs' potential against missile defence," *BBC Monitoring*, December 18, 2011, available at: <<https://research.zecco.com/research/quotes/stock-news/story.asp?key=100-352n3931-1>>.: "Russia develops new system for Strategic Missile Forces," *Pravda.ru*, January 10, 2012, available at: <http://english.pravda.ru/russia/politics/10-01-2012/120174-russia_missile-0/>.

⁴²⁹ "Votkinsk plant to increase production by 40% in 2011," *Interfax*, March 21, 2011, available at: <<http://www.interfax.co.uk/russia-cis-military-news-bulletins-in-english/votkinsk-plant-to-increase-production-by-40-in-2011/>>.

⁴³⁰ "Russian Defense Ministry will procure ICBMs, subs, satellites, missile systems this year," *Interfax*, March 18, 2011, available at: <<http://www.interfax.co.uk/russia-cis-military-news-bulletins-in-english/russian-defense->>.

⁴³¹ "Putin visits submarine building centre," *ITAR-TASS*, November 10, 2011, available at: <<http://www.itar-tass.com/c142/268375.html>>.

⁴³² "Prime Minister Vladimir Putin chairs a meeting in the town of Votkinsk on the development of the defence industry and the fulfillment of the government arms programme through 2020," available at: <<http://government.ru/eng/docs/14545/>>.: "Russia to Double Production of Strategic Missile Systems in 2013—Putin," *Interfax*, March 21, 2011, available at: <<http://www.interfax.co.uk/russia-cis-general-news-bulletins-in-english/russia-to-double-production-of-strategic-missile-systems-in-2013-putin/>>.

⁴³³ Ibid.

⁴³⁴ "Russia needs 'smart' military defense," *Russia Today*, February 20, 2012, available at: <<http://rt.com/politics/russia-military-putin-article-709/>>.

⁴³⁵ "New Heavy ICBM to Be Put Into Service in 2018 - Expert (Part 2)," *Interfax*, May 5, 2011, available at: <<http://www.interfax.co.uk/russia-cis-military-news-bulletins-in-english/new-heavy-icbm-to-be-put-into-service-in-2018-expert-part-2-2/>>.

⁴³⁶ "Missile supply to Russian army to increase dramatically in next few years – Serdyukov," *Interfax*, July 1, 2011, available at: <<http://www.interfax.co.uk/russia-cis-military-news-bulletins-in-english/missile-supply-to-russian-army-to-increase-dramatically-in-next-few-years-serdyukov-2/>>.

⁴³⁷ "Bulava launched from Yuri Dolgorukiy submarine," June 28, 2011, available at: <http://russianforces.org/blog/2011/06/bulava_launched_from_yuri_dolg.shtml>.: Konstantin Bogdanov, "Russia's asymmetrical response to U.S. missile defense," *RIA Novosti*, September 29, 2011, available at: <<http://en.rian.ru/analysis/20110929/167249196.html>>.: The test-launch of a new strategic missile was abortive," *ITAR-TASS*, September 29, 2011, available at: <<http://www.itar-tass.com/en/c142/236106.html>>.

⁴³⁸ "New Heavy ICBM to Be Put Into Service in 2018 - Expert (Part 2), op. cit.

⁴³⁹ "Russia: Bulava ballistic missile to arm future submarines – designer," *Interfax-AVN*, May 12, 2011. Available at: <<http://www.accessmylibrary.com/article-1G1-256273944/russia-bulava-ballistic-missile.html>>.

⁴⁴⁰ *Svobodnaya Pressa*, May 25, 2011.

⁴⁴¹ Pavel Podvig, "Liner SLBM explained," *Russian forces.org*, October 4, 2011, available at: <<http://russianforces.org/blog/>>.

⁴⁴² "Bulava missile could be put in service before year's end – Defense Ministry (Part 2)," *Interfax*, June 2, 2011, available at: <<http://www.interfax.com/newsinf.asp?id=248608>>.: "Bulava successful test launch makes realistic delivery of two new subs by yearend," *ITAR-TASS*, June 28, 2011, available at: <<http://www.itar-tass.com/en/c154/175196.html>>.

⁴⁴³ Pavel Felgengauer, "The Russia Sea-Based Deterrent Development Seems On Track," *Eurasia Daily Monitor* Volume 8, Issue 126, June 30, 2011, available at: <[http://www.jamestown.org/single/?no_cache=1&tx_ttnews\[tt_news\]=38115](http://www.jamestown.org/single/?no_cache=1&tx_ttnews[tt_news]=38115)>.

⁴⁴⁴ "New warheads for Russian missiles," December 22, 2010, available at: <<http://english.ruvr.ru/2010/12/20/37280236.html>>.

⁴⁴⁵ Schneider, "The Future of the U.S. Nuclear Deterrent," op. cit. p. 347.

⁴⁴⁶ "The ultimate warhead puts end to discussions" *Russia Today*, available at: <<http://www.rt.com/news/warhead-ultimate-missile-system/>>.

⁴⁴⁷ "Interview with RF First Deputy Defense Minister Vladimir Aleksandrovich Popovkin by Oleg Falichev," op. cit.

⁴⁴⁸ "Statement of Dr. James N. Miller, Principal Deputy Under Secretary of Defense for Policy Before the House Committee on Armed Services, November 2, 2011," available at: <http://armedservices.house.gov/index.cfm/files/serve?File_id=faad05df-9016-42c5-86bc-b83144c635c9>.

⁴⁴⁹ "Obama Advisor Gary Samore, 'The Ball Is Very Much in Tehran's Court'," *Radio Free Europe*, April 14, 2011, available at: <http://www.rferi.org/content_interview_samore_Russia_Iran_us_poicy/31557326.html>.

⁴⁵⁰ "Moscow, Washington must demonstrate openness regarding nuclear potentials – expert," *Interfax-AVN*, April 18, 2011, available at: <<http://www.interfax.co.uk/russia-cis-general-news-bulletins-in-english/moscow-washington-must-demonstrate-openness-regarding-nuclear-potentials-expert/>>.

⁴⁵¹ Amy F. Woolf, *Nonstrategic Nuclear Weapons*, Washington D.C.: Congressional Research Service, February 2, 2011, available at: <<http://www.fas.org/sgp/crs/nuke/RL32572.pdf>>.

⁴⁵² "New RF-US agt to replace START to be concluded before year end – FM," *ITAR-TASS*, March 3, 2009, available at: <<http://www.itar-tass.com/eng/level2.html?NewsID=14295189&PageNum=1>>.

⁴⁵³ "Russia could focus on tactical nuclear weapons for subs," *Ria Novosti*, March 23, 2009, available at: <<http://en.rian.ru/russia/20090323/120688454.html>>.

⁴⁵⁴ *Nezavisimoye Voyennoye Obozreniye Online*, May 20, 2011.; *Izvestiya Online*, March 11, 2011.

⁴⁵⁵ "Up to 120 Iskander missiles to be supplied to Russian Armed Forces," *Interfax*, August 1, 2011, available at: <<http://www.interfax.co.uk/russia-cis-military-news-bulletins-in-english/up-to-120-iskander-missiles-to-be-supplied-to-russian-armed-forces-2/>>.

⁴⁵⁶ Rose Gottemoeller, "Statement at the Annual Security Review Conference," July 1, 2011, available at: <<http://www.state.gov/t/avc/rs/167477.htm>>.

⁴⁵⁷ Viktor Myasnikov, "The Last Secret: The United States Insistently Strives to Control Our Tactical Nuclear Weapons," *Nezavisimoe Voennoye Obozrenie*, June 10, 2005, available at: http://nvo.ng.ru/armament/2005-06-10/1_secret.html.

⁴⁵⁸ "Tactical nuclear arms cuts could be discussed after New START is implemented – Lavrov," op. cit.

⁴⁵⁹ "Russia says too early to talk tactical nuclear weapons with United States," *RIA Novosti*, January 29, 2011, available at: <http://www.en.rian.ru/military_news/20110129/162362622.html>.

⁴⁶⁰ "Putin hopes for Russian-US nuclear disarmament cooperation - nothing unilateral," *Interfax*, February 24, 2012, available at: <<https://research.zecco.com/research/quotes/stock-news/story.asp?key=100-055n1662-1>>.

⁴⁶¹ "Prime Minister Vladimir Putin meets with experts in Sarov to discuss global threats to national security, strengthening Russia's defences and enhancing the combat readiness of its armed forces," Prime Minister of Russia, February 24, 2012, available at: <<http://premier.gov.ru/eng/events/news/18248/>>.

⁴⁶² "'Big Challenges' in U.S.-Russian Tactical Nuke Talks, Samore Says," *Global Security Hotwire*, April 14, 2011, available at: <http://www.globalsecuritynewswire.org/siteservices/print_friendly.php?ID=nw_20110414_2779>.

⁴⁶³ Ibid.

⁴⁶⁴ Dmitriy Astakhov, "U.S.-Russian talks on tactical nuclear arms cuts will take time - U.S. official," *RIA Novosti*, March 22, 2011, available at: <<http://en.rian.ru/world/20110322/163136512.html>>.

⁴⁶⁵ Pavel Podvig, "Some details of the New START negotiations," op. cit.

⁴⁶⁶ "Russian experts see no close prospects for U.S.-Russian deal on tactical nuclear weapons," *Russia and CIS Business Newswire*, August 5, 2010, available at: <http://goliath.ecnext.com/coms2/gi_0199-13265053/Russian-experts-see-no-close.html>.

⁴⁶⁷ Alex Steffler, "What the Russian papers say," *RIA Novosti*, February 5, 2010, available at: <<http://en.rian.ru/papers/20100205/157782788.html>>.

⁴⁶⁸ Woolf, "Nonstrategic Nuclear Weapons," op. cit. pp. 30, 32.

⁴⁶⁹ George P. Shultz, William J. Perry, Henry A. Kissinger, and Sam Nunn, "Deterrence in the Age of Nuclear Proliferation," *Wall Street Journal*, March 7, 2011, available at: <<http://online.wsj.com/article/SB10001424052748703300904576178760530169414.html>>.

⁴⁷⁰ Saradzhyan, "Russia's Non-strategic Nuclear Weapons in Their Current Configuration and Posture: A Strategic Asset or Liability?," op. cit. p. 29.

⁴⁷¹ Schneider, *The Nuclear Forces and Doctrine of the Russian Federation*, op. cit. p. 14.

⁴⁷² *Monitoring Limits on Sea-Launched Cruise Missiles*, OTA-ISC-513, Congress of the United States, September 1992, p. 3, available at: <<http://www.fas.org/ota/reports/9226.pdf>>.

⁴⁷³ Andre Gsponer and Jean-Pierre Hurni, "The physical principles of thermonuclear explosives, inertial confinement fusion, and the quest for fourth generation nuclear weapons," Geneva: Independent Scientific Research Institute, January 20, 2009, p. VI, available at: <http://www.e-ipi.net/isri/_media/publications:ag-09-01.pdf>.

⁴⁷⁴ "Opening Pandora's nuclear war chest," available at: <http://whyfiles.org/167new_nukes/3.html>.

⁴⁷⁵ "Pure fusion weapon," June 9, 2011, available at: <http://en.wikipedia.org/wiki/Pure_fusion_weapon>.

-
- ⁴⁷⁶ “Professor Hans Bethe,” *The Telegraph*, March 8, 2005, available at: <<http://www.telegraph.co.uk/news/obituaries/1485144/Professor-Hans-Bethe.html>>.
- ⁴⁷⁷ Schneider, *The Nuclear Forces and Doctrine of the Russian Federation*, op. cit., p. 14.
- ⁴⁷⁸ *Voyenno-Promyshlennyy Kuryer Online*, October 6, 2010.
- ⁴⁷⁹ *Bulletin po Atomnoy Energii*, November 30, 2003.
- ⁴⁸⁰ Gsponer and Hurni, “The physical principles of thermonuclear explosives, inertial confinement fusion, and the quest for fourth generation nuclear weapons,” op. cit. p. 145.
- ⁴⁸¹ Schneider, “The Future of the U.S. Nuclear Deterrent,” op. cit. p. 348.
- ⁴⁸² Schneider. *The Nuclear Forces and Doctrine of the Russian Federation*, op. cit., p.16.
- ⁴⁸³ *Nezavisimaya Gazeta*, August 12, 2003.
- ⁴⁸⁴ Belous, “Characteristics and Missions of Modern Neutron Weapons,” op. cit.
- ⁴⁸⁵ *Nezavisimaya Gazeta*, August 12, 2003.
- ⁴⁸⁶ “START Treaty Between the United States of American and the Union of Soviet Socialist Republics on the Reduction and Limitation of Strategic Offensive Arms,” op. cit. pp. 208-213.
- ⁴⁸⁷ “In Situ Reentry Vehicle On-Site Inspection,” DTRA03-004, Defense Threat Reduction Agency, available at: <<http://www.acq.osd.mil/osbp/sbir/solicitations/sbir031/pdf/dtra031.pdf>>.
- ⁴⁸⁸ *Nezavisimoye Voyennoye Obozreniye*, October 17, 2008.: “Janes’ cover story,” December 9, 2007, available at: <http://russianforces.ordddg/blog/2007/07_Janes_cover_story.shtml>.: “How Many warheads?,” May 17, 2007, available at: <http://russianforces.org/blog/2007/05/how_many_warheads.shtml>.
- ⁴⁸⁹ *Soviet Military Power 1983*, Washington D.C.: U.S. Department of Defense, 1983, p. 40.
- ⁴⁹⁰ *Nezavisimoye Voyennoye Obozreniye*, February 13, 2004.
- ⁴⁹¹ Schneider, *The Nuclear Forces and Doctrine of the Russian Federation*, op. cit., p. 3.
- ⁴⁹² *Krasnaya Zvezda*, September 4, 2009.
- ⁴⁹³ *SpaceNews.Ru*, June 3, 2008.
- ⁴⁹⁴ Kenneth R. Timmerman, “Can Moscow be Trusted? Inside Russia’s magic mountain,” *WorldNetDaily.com*, June 2010, available at: <<http://www.wnd.com/?pageId=4137>>.
- ⁴⁹⁵ Ibid.
- ⁴⁹⁶ Schneider, *The Nuclear Forces and Doctrine of the Russia Federation*, op. cit., p. 14.
- ⁴⁹⁷ *Criminal Networks, Smuggling, and Weapons of Mass Destruction Conference Report*, Defense Threat Reduction Agency, March 2010, p. 6.
- ⁴⁹⁸ “Stand-off Uranium Detection,” DTRA03-001, Defense Threat Reduction Agency, available at: <<http://www.acq.osd.mil/osbp/sbir/solicitations/sbir031/pdf/dtra031.pdf>>.
- ⁴⁹⁹ Gsponer and Hurni, “The physical principles of thermonuclear explosives, inertial confinement fusion, and the quest for fourth generation nuclear weapons,” op. cit. p. 37.
- ⁵⁰⁰ New START Treaty, Protocol, Annex Section VI paragraph 1.
- ⁵⁰¹ Rose Gottemoeller, “New START: Security Through 21st-Century Verification,” available at: <http://www.armscontrol.org/act/2010_09/Gottemoeller>.
- ⁵⁰² “Discover Interview The Beautiful Mind of Freeman Dyson,” *Discover*, June 9, 2008, available at: <<http://discovermagazine.com/2008/jun/09-the-beautiful-mind-of-freeman-dyson>>.
- ⁵⁰³ “Atomic Boom and Bust,” *Air Force Magazine*, July 2010, p. 24, available at: <<http://www.airforce-magazine.com/MagazineArchive/Magazine%20Documents/2010/July%202010/0710chart.pdf>>.
- ⁵⁰⁴ *The President’s Unclassified Report On Soviet Noncompliance With Arms Control Agreements*, Washington D.C.: The White House, March 10, 1987, p. 5.

⁵⁰⁵ *Adherence and Compliance with Arms Control, Proliferation Disarmament Agreements and Commitments*, 2005, op. cit. pp. 15-31.

⁵⁰⁶ "New RF-US agt to replace START to be concluded before year end – FM," op. cit.

⁵⁰⁷ Schneider, *The Emerging EMP Threat to the United States*, op. cit. pp. 1-3.

⁵⁰⁸ "Written Statement by Dr. Michael Bernardin," available at: <<http://www.house.gov/hasc/testimony/106thcongress/99-10-13graham.htm>>.

⁵⁰⁹ "Statement by Dr. Lowell Wood," available at: <<http://www.house.gov/hasc>>.

⁵¹⁰ Shultz, Perry, Kissinger and Nunn. "Deterrence in the Age of Nuclear Proliferation," op. cit.

⁵¹¹ "Ellen Tauscher, Under Secretary for Arms Control and International Security Remarks to the Commonwealth Club, Lafayette Library and Learning Center Lafayette, CA, July 28, 2011," available at: <<http://www.state.gov/t/us/169244.htm>>.

⁵¹² "The undimmed danger of Iran's nuclear program," *The Washington Post*, September 6, 2011, available at: <http://www.washingtonpost.com/opinions/the-undimmed-danger-of-irans-nuclear-program/2011/09/06/gIQAhnOo7J_story.html>.

⁵¹³ James R. Clapper, "State For the Record on the World Wide Threat Assessment of the U.S. Intelligence Community For the Senate Select Committee on Intelligence," February 16, 2011, p. 4, available at: <<http://www.intelligence.senate.gov/110216/dni.pdf>>.

⁵¹⁴ Quoted in Keith Payne, "Deterrence and Stability Beyond New START," available at: <<http://www.newparadigmsforum.com/NPFtestsite/?p=1024>>.

⁵¹⁵ "Rose Gottemoeller Assistant Secretary, Bureau of Arms Control, Verification and Compliance U.S. Strategic Command 2011 Deterrence Symposium Omaha, Nebraska August 4, 2011," available at: <<http://www.state.gov/t/avc/rls/169545.htm>>.

⁵¹⁶ "Remarks Rose Gottemoeller Assistant Secretary, Bureau of Arms Control, Verification and Compliance Remarks at the Atlantic Council Washington, DC September 9, 2011," available at: <<http://www.state.gov/t/avc/rls/172055.htm>>.

⁵¹⁷ "President Obama Asks Medvedev for 'Space' on Missile Defense — 'After My Election I Have More Flexibility'," *ABC News*, March 26, 2012, available at: <<http://abcnews.go.com/blogs/politics/2012/03/president-obama-asks-medvedev-for-space-on-missile-defense-after-my-election-i-have-more-flexibility/>>.

⁵¹⁸ Charles Krauthammer, "Obama's Flexibility Doctrine," *National Review On-Line*, March 29, 2012, available at: <<http://www.nationalreview.com/articles/294818/obama-s-flexibility-doctrine-charles-krauthammer?pg=2>>.

⁵¹⁹ Konstantin von Egger, "Due West: Obama's 'Flexibility' Gives Putin Edge on Missile Defense," *RIA Novosti*, March 28, 2011, available at: <<http://en.rian.ru/columnists/20120328/172443744.html>>.

⁵²⁰ Keith Payne, "Maintaining Flexible and Resilient Capabilities for Nuclear Deterrence," *Strategic Studies Quarterly*, Summer 2011, p. 7, available at: <http://www.nipp.org/Maintaining%20Flexible%20and%20Resilient%20Capabilities%20for%20Nucle_1.pdf>.

⁵²¹ *Interim Report of the Congressional Commission on the Strategic Posture of the United States*, December 15, 2008, p. 4, available at: <http://www.usip.org/files/file/trategic_posture_commission_interim_report.pdf>.

⁵²² Kathleen C. Bailey et. al., *White Paper On The Necessity of the U.S. Nuclear Deterrent, Updated*, August 15, 2007, p. 4, available at: <<http://www.belfercenter.ksg.harvard.edu/files/ISAB%20-%20Nuclear%20Cascade%20Report.pdf>>.

⁵²³ William J. Perry, Chairman and James R. Schlesinger, Vice-chairman, *America's Strategic Posture The Final Report of the Congressional Commission on the Strategic Posture of the United States*, Washington D.C.: U.S. Institute for Peace, 2009, p. 13, available at: <http://www.usip.org/files/file/strat_posture_exec_sum.pdf>.

⁵²⁴ "Testimony Prepared By: Dr. Keith B. Payne Professor and Head, Graduate Department of Defense and Strategic Studies Missouri State University Commissioner, Congressional Strategic Posture Commission," op. cit. p. 2.

⁵²⁵ Keith Payne, "Maintaining Flexible and Resilient Capabilities for Nuclear Deterrence," *Strategic Studies Quarterly*, Summer 2011, available at: <http://nipp.org/Maintaining%20Flexible%20and%20Resilient%20Capabilities%20for%20Nucle_1.pdf>.

⁵²⁶ Ibid. p. 6.

⁵²⁷ James T. Quinlivan and Olga Olier, *Nuclear Deterrence in Europe Russian Approaches to a New Environment and Implications for the United States*, Santa Monica, CA: The RAND Corporation, 2011, p. xii. available at: <http://www.rand.org/content/dam/rand/pubs/monographs/2011/RAND_MG1075.pdf>.

⁵²⁸ *America's Strategic Posture The Final Report of the Congressional Commission on the Strategic Posture of the United States*, op. cit. p. 10.