

CHAPTER EIGHT

A Russian Perspective

on the Challenge of U.S., NATO, and Russian Non-Strategic Nuclear Weapons

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The New START Treaty between the United States and Russia constitutes an important and useful step in bilateral nuclear arms reductions. The Treaty's ratification by both nations and the beginning of its practical implementation has opened up a new security agenda consisting of highly complex problems involving both nuclear and conventional forces. One of the key challenges of such efforts would be extending negotiations and agreements to non-strategic nuclear weapons (NSNW, alternatively called pre-strategic, tactical, or theater nuclear weapons).

Even during negotiations on New START, several U.S. Senators insisted on including NSNW in the agreement. The April 2010 U.S. Nuclear Posture Review (NPR) stresses the concern over Russia's NSNW and indicates the importance of including these weapons in future negotiations.¹ The fact that NSNW were left out of New START permitted the new Treaty to be concluded shortly after the original START expired in December 2009; otherwise negotiations might have continued for many years without any guarantee of success, due to the complexity of the NSNW issue. The final U.S. Senate resolution of ratification of New START adopted in December 2010, however, states that “the United States will seek to initiate, following consultation with NATO Allies but not later than one year after the entry into force of the New START Treaty, negotiations with the Russian Federation on an agreement to address the disparity between the non-strategic (tactical) nuclear weapons stockpiles of the Russian Federation and of the United States and to secure and reduce tactical nuclear weapons in a verifiable manner.”

In addition, the NATO Summit declaration of November 2010 and its new Strategic Concept underlined the importance of seeking Russian agreement to

1. United States, Department of Defense, *Nuclear Posture Review Report* (Washington, D.C.: April 2010), X–XI.

CHAPTER EIGHT: KEY FINDINGS

- ▶ There is every indication that the United States and NATO will make the issue of NSNW one of the main priorities of their foreign policy and disarmament strategy. The United States and NATO believe Russia has a huge numerical advantage in NSNW—an advantage that would be more consequential under further reductions in strategic nuclear forces. In addition, the location and security of Russian NSNW is an expressed concern of both the United States and NATO.
- ▶ The Russian position is that U.S. NSNW now forward deployed in Europe must be returned to the United States as a condition for dialogue; moreover, Russia believes there are several security issues, including missile defense and conventional forces that must be addressed in parallel to NSNW in any future disarmament discussions.
- ▶ Beyond this fundamental divide in U.S./NATO–Russian perceptions, there are several difficult issues associated with any future NSNW limitations. These involve the definition of NSNW, their location and deployment status, their delivery vehicles, third-country systems, and the political and military utility of these weapons as perceived from both sides.
- ▶ One option being considered by the United States for the next round of nuclear arms control is an equal ceiling on all U.S. and Russian nuclear warheads—strategic and non-strategic, deployed and nondeployed. This could also involve relocating Russian NSNW as far as possible from NATO borders, as stated in the NATO Lisbon Summit Declaration.
- ▶ As elegant as this model may look at first glance, it has profound deficiencies when viewed from Moscow. In particular, Russia believes it must rely more than the United States on NSNW for regional contingencies (including beyond its NATO neighbors), and would not want to accept inequality in strategic arms in order to maintain regional security. As to combat readiness, the type of storage facility (operational or centralized) is more important than the geographic location of the storage facility. Moreover, the Russian advantage in NSNW as perceived by the West largely depends on the counting rules for NSNW, which combined with the complex problems of verification might lead negotiation on the above model to a prolonged deadlock, at least in the foreseeable future.
- ▶ A more promising way to begin the process of engagement on NSNW would be for the United States, NATO, and Russia to start with consultations on definitions, proceed with data exchanges and associated confidence building measures, and then reach an agreement on relocating both U.S. and Russian NSNW from operational (forward based) to centralized (reserve) storages. Expanding U.S.-Russian and NATO-Russian joint threat assessment activities to include regional nuclear and conventional balances and the role of NSNW might also narrow the gap between Russian and Western security perceptions.

Defining NSNW as a subject of negotiations is quite a challenge, raising a number of questions and issues.

increase transparency on NSNW in Europe and relocating them away from the territory of NATO members, as well as taking into account the disparity with the greater Russian NSNW stockpile in any further steps by NATO.²

It should therefore be presumed that the United States and NATO will make the NSNW issue one of the main priorities of their foreign policy and disarmament strategy.

WHY LIMIT NSNW?

In the West there are several specific arguments for limiting NSNW:

- ▶ It is assumed that Russia has a huge numerical advantage in NSNW over the United States and NATO and that lowering levels of strategic forces would make this advantage yet more tangible;
- ▶ Russia's assumed numerical advantage in NSNW and the location of Russian NSNW is an increasing concern for NATO;
- ▶ In case of military conflict, Russian NSNW are to be deployed together with general-purpose forces and may be immediately involved in combat actions, thus triggering quick nuclear escalation; and
- ▶ Allegedly, to provide flexibility to their combat employment, NSNW (especially older versions) have less stringent or redundant systems ("electronic locks") for preventing unauthorized use than strategic weapons. NSNW also have smaller physical dimensions making them more vulnerable to theft and more easily accessible and attractive for terrorists.

Russia's position on NSNW has been extremely reserved and vague. It has been limited to the demand that the United States removes its NSNW based in Europe to its national territory, as a precondition for entering any dialogue on the subject.

WHAT ARE NSNW?

Defining NSNW as a subject of negotiations is quite a challenge, raising a number of questions and issues. It would be logical to include in this category the nuclear weapon systems that are not covered by the existing treaties, namely the New START Treaty of 2010 and the Intermediate-Range Nuclear Forces (INF) Treaty of 1987.

According to this logic, such nuclear weapons should include ground-launched ballistic missiles (GLBM) and ground-launched cruise missiles (GLCM) with

2. North Atlantic Treaty Organization, *Strategic Concept for the Defense and Security of the Members of the North Atlantic Treaty Organization* (Lisbon: November 2010), <http://www/nato.lisbon2010/strategic-concept-2010-eng.pdf>.

ranges of less than 500 kilometers, combat aircraft with ranges of less than 8,000 kilometers not capable of carrying long-range (i.e., more than 600 kilometers) air-launched cruise missiles (ALCM) and submarine-launched ballistic missiles (SLBM) with ranges of less than 600 kilometers.

Within this construct—and in line with the United States and the USSR/Russia Presidential Nuclear Initiatives (PNIs) from the early 1990s—NSNW should include various other nuclear systems, such as the following:

- ▶ Artillery shells and nuclear mines (demolition munitions) assigned to the Ground Forces;
- ▶ land-based and air-launched anti-aircraft missiles;
- ▶ air-to-surface missiles and bombs (including depth charges) assigned to non-strategic Air Force and Navy aircraft;
- ▶ various surface-to-air, anti-ship, and anti-submarine missiles and torpedoes of surface ships and attack submarines; and
- ▶ artillery shells of surface ships and sea-launched land-attack cruise missiles of various range on combat ships and attack submarines.

SEA LAUNCHED CRUISE MISSILES: Such a broad interpretation, however, does not address the question of how one defines long-range (about 3,000 kilometers) SLCMs with nuclear warheads that may be deployed on ships and attack submarines? In terms of technical characteristics, such missiles are similar or even identical to GLCMs prohibited and eliminated under the INF Treaty and ALCMs included in the START Treaties. This type of nuclear SLCM was treated as a strategic weapon and limited by the START I Treaty of 1994–2009 through a separate ceiling of 880 for each party; although this provided some transparency, there were no verification procedures. The New START Treaty of 2010, however, makes no mention of this weapons category. In Russia, nuclear SLCMs are considered and called “strategic SLCMs.”

GRAVITY BOMBS AND MEDIUM BOMBERS: Certain U.S. nuclear gravity bombs (such as the B-61 and B-83) can also be deployed with both U.S. strategic (heavy) bombers and tactical strike aviation, placing them in both strategic and NSNW classes.

The Russian Tu-22M3 medium bomber is the only medium range weapon system left after the elimination of medium-range (500–5500 km) ground based ballistic and cruise missiles under the terms of the 1987 INF Treaty. In the SALT II agreement of 1979, this system was treated in an appendix that prohibited its refueling and other methods of range extension, and also limited production rates.³

3. Much later this type of aircraft was included in the CFE Treaty limitations and reductions of 1990 together with other conventional airplanes and ground forces’ arms in Europe.

THIRD COUNTRIES: Another key issue in defining NSNW is that beyond the United States and Russia, other nuclear weapons states (North Korea, France, India, Israel, Pakistan, and the People’s Republic of China) also have short- and medium-range aircraft and missiles in their inventory. For many of these states, “non-strategic” systems comprise most of their entire nuclear capability, although these countries regard the weapons as “strategic.”

In particular with respect to NATO, the French Strike Force includes 60 Mirage 2000N land-based and 24 Super-Etendard carrier-based fighter-bombers that are capable of delivering a total of 60 Air-Sol Moyenne Portée Améliorée (ASMPA) air-to-surface missiles to the target. By their range (up to 500 kilometers) these missiles may be attributed either to medium-range (like missiles of Russian Tu-22M3 bombers) or to tactical nuclear systems. However, France regards them as a part of its strategic force.

DATA ISSUES: The existing American and Russian NSNW systems remain following the implementation of PNIs in the early 1990s. Because the PNIs did not have any verification procedures, there is a considerable amount of confusion as to how many arms of various types have been withdrawn from forward bases, where they were relocated, and what kind of dismantlement, elimination, and utilization handling was applied to them. All this understandably would affect the assessment of the present U.S.-Russian NSNW balance.

NSNW MAINTENANCE AND USE: Also important to consider are two aspects of NSNW maintenance and use. First, with very few exceptions, NSNW are deployed on dual-purpose—conventional and nuclear—platforms, and use dual-purpose launchers and delivery vehicles.⁴ Therefore, in contrast to strategic nuclear missiles, it is impossible to count NSNW or implement and verify their limitation or elimination through the elimination of their launchers, delivery vehicles or platforms (such as ballistic missiles, heavy bombers, and nuclear-powered ballistic missile submarines under the START treaties). They all fall in the category of general-purpose forces inventory.

They are designed mainly for conventional military operations and are partially covered by other agreements (such as the Conventional Forces in Europe (CFE) Treaty, which limits non-strategic combat aircraft and artillery in Europe). Thus, any substantial reduction of NSNW by their launchers and delivery vehicles would be very difficult, because it would lead to drastic cuts in combat equipment and arms of air forces, the navies, ground forces, and air/missile defense of the nuclear powers, including those assigned missions in local conflicts.

Unlike strategic weapons, NSNW are not operationally deployed (i.e., they are not mated to their platforms, launchers, and/or delivery vehicles in peacetime). In the 1990s, Russia would routinely deploy a few nuclear anti-ship missiles and

4. Medium bombers, fighter-bombers, ships and attack submarines, short-range offensive missiles and surface-to-air missiles, naval weapons, and heavy artillery.

torpedoes on its attack submarines on patrol; however, after the catastrophe with the *Kursk* nuclear submarine in August 2000, this practice ended.⁵ It is unknown whether Russian attack nuclear submarines occasionally go on sea patrol with nuclear SLCMs to supplement the one or two ballistic missile submarines deployed at sea at any given time.

WHERE ARE NSNW?

All U.S. and Russian NSNW are located in storage facilities. There are several principle types of facilities that imply different possibilities for accounting, verification, and limitation of NSNW. Differentiating among deployed and nondeployed NSNW may imply differentiating among various types of storage facilities.⁶

First, there are operational depots at or near military bases, where NSNW delivery vehicles, launchers, or platforms are deployed. These NSNW are either assembled with delivery vehicles (missiles, bombs, torpedoes, etc.) or have separated munitions to be mated with delivery systems on demand. Sometimes NSNW are kept at the same depots with strategic nuclear weapons.⁷

Second, there are large centralized storage facilities, each with several large sections where a reserve stock of hundreds or even thousands of non-strategic and strategic nuclear weapons are kept after being withdrawn from operational bases. They are preserved as ready replacement or reinforcement of the nuclear arms at operational bases; some may be used for spare parts and many await dismantlement. They undergo regular service, which is strictly scheduled, regulated, and recorded, in order to provide checks and maintenance.

In Russia such storage facilities are called “S-sites” and are managed by special nuclear-technical troops of the 12th Main Directorate of the Ministry of Defense (12th GUMO). The storage facilities are surrounded by several perimeters of fences with various monitoring and safety equipment, and heavily guarded and patrolled by special troops. The personnel and their families live in closed cities adjacent to S-sites and isolated by another fenced perimeter and guarded by the internal troops.⁸

5. There is evidence from parliamentary sources that the *Kursk* had two anti-ship nuclear SS-N-19 missiles (P-700 Granat), although later this was officially denied by the Russian Navy. See <http://www.gazeta.ru/2001/04/05/bylolinakurs.shtml>.

6. In contrast to strategic weapons, which are considered deployed if actually mated with strategic nuclear delivery vehicles or, in the case of heavy bombers, having nuclear weapons at nearby depots.

7. Foremost at naval bases and airfields where strategic submarines and heavy bombers are collocated with general purpose planes and naval vessels.

8. During the 1990s, for the safety reasons all the depots at armed forces’ bases were transferred to the management of the 12th GUMO and thus also became “centralized” storage sites, from which the warheads may be handed to armed forces only on the authorization of the Ministry of Defense.

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In the United States, perhaps the closest equivalent to a Russian “S-site” would be the Kirtland Underground Munitions Storage Complex, which provides nuclear weapons storage, shipping, and maintenance for the U.S. Air Force and Navy.

The third type of storage facilities is located at nuclear munitions manufacturing facilities. Here, nuclear arms are assembled and sent to centralized storage facilities and operational bases, or dismantled for use and further preservation in stocks to be eventually used for military (in new weapons) or civilian (nuclear fuel) purposes. In the United States, there is one such facility, Pantex in Amarillo, Texas, run by the Department of Energy (DOE). In Russia, there are presently two manufacturing plants managed by the military sector of Rosatom (according to unofficial data, these are “Zlatoust-36” plant in the Cheliabinsk region and “Start” plant at Penza-19 about 400 km to the south-east from Moscow).

The fourth type is deep reserve storage facilities with nuclear “pits” from dismantled nuclear munitions under control of the U.S. DOE and Russian Rosatom. These facilities represent efforts to manage overall stocks of weapon-grade nuclear materials. The new Russian storage at Mayak nuclear complex near Cheliabinsk (Southern Ural Mountains area) was built with the help of the United States and is designed for 25,000 containers with weapon nuclear material components.

In addition to the above, nuclear munitions can be in transit at any given time, moving among various storage sites, which Russia does by land routes and the United States by airplanes.

Depending on the geographic location and storage type of NSNW to be taken into account, the U.S.-Russian or Russian-NATO balance of NSNW would vary significantly in terms of numbers (and the degree of “superiority” in terms of comparing the U.S./NATO–Russia NSNW balance, with almost every public Western estimate indicating a large Russian advantage); this would also affect possible limitations and verification measures.

U.S. AND RUSSIAN NON-STRATEGIC NUCLEAR WEAPONS⁹

The United States

According to various estimates, by the end of the 1980s, the United States had over 8,200 NSNW. In line with the unilateral PNI of 1991, the United States committed to withdraw its NSNW from foreign bases to its own territory, eliminate all NSNW from ground forces, remove all NSNW from surface ships and attack submarines (excluding long-range SLCMs), and destroy 50 percent of its total number of NSNW.¹⁰ Eventually the United States was to destroy over 90 percent.

9. Neither of the two powers discloses official information on its stockpiles of NSNW.

10. Alexander Pikayev, “Non-strategic Nuclear Weapons,” *Nuclear Proliferation: New Technologies, Weapons and Treaties*, eds. Alexei Arbatov and Vladimir Dyorkin (Moscow: Carnegie Moscow Center, ROSSPEN, 2009), 129–159.

According to unofficial estimates, the United States currently has approximately 500 “active” NSNW. These include 100 Tomahawk SLCMs (TLAM-N) for nuclear-powered attack submarines at Kings Bay and Bangor naval bases in the U.S. territory. A further 190 SLCM warheads (W80-0) are reserved in storage. In addition, there are 400 gravity bombs (B-61-3 and B-61-4), with 200 bombs at six U.S. Air Force storage facilities in five NATO member-states (Belgium, Germany, Italy, the Netherlands, and Turkey). These bombs are to be delivered by F-16 fighter-bombers of the U.S. Air Force, as well as by allied airplanes of the same type and Tornado strike aircraft.¹¹

According to the new U.S. Nuclear Posture Review, all Tomahawk nuclear SLCMs will be retired. The B-61 gravity bombs, however, will undergo a program to enhance the weapons safety and extend its service life for another 30 years. The new tactical F-35 fighter aircraft, as well as remaining F-15E and F-16 aircraft, will be certified to deliver these bombs. These B-61 bombs are addressed in the context of the U.S. extended deterrence commitment to Allies, and their future deployment in Europe will be subject to consultation within NATO.¹²

There is no reliable information on the aggregate number of nuclear munitions stored on U.S. territory. By some data, these munitions are stored at 21 locations in 13 states in various storage facilities at air and naval bases, in separate central locations, and in depots at Pantex.¹³ According to official data, U.S. strategic nuclear forces, NSNW, and the active stockpiled reserve consist of 5,113 nuclear warheads.¹⁴ By some independent experts’ estimates, another 3,500–4,500 weapons are deactivated and intended for disposal.¹⁵ In addition, around 14,000 nuclear “pits” are stored at Pantex and 5,000 canned assemblies (thermonuclear secondaries) are at Oak Ridge Y-12 nuclear plant (Tennessee).¹⁶

The Russian Federation

Information on Russia’s non-strategic nuclear assets is mostly classified. According to various estimates, Russia had up to 22,000 units of NSNW in the late 1980s.¹⁷ As part of the USSR and Russia PNIs of 1991–1992, all NSNW of the

11. Stockholm International Peace Research Institute, *SIPRI Yearbook 2010: Armaments, Disarmament and International Security*, (Stockholm: Oxford University Press, 2010), 341–42.

12. *Nuclear Posture Review Report 2010*, XII–XIV.

13. Robert S. Norris and Hans M. Kristensen, “Nuclear Notebook: Worldwide Deployments of Nuclear Weapons 2009,” *Bulletin of the Atomic Scientists* 65(6) (November 2009), 86.

14. United States, Department of Defense, “Fact Sheet: Increasing Transparency in the U.S. Nuclear Weapons Stockpile,” May 3, 2010, Washington, D.C., http://www.defense.gov/npr/docs/10-05-03_Fact_Sheet_US_Nuclear_Transparency_FINAL_w_Date.pdf.

15. *Eliminating Nuclear Threats: A Practical Agenda for Global Policymakers*, (Canberra, A.C.T: International Commission on Nuclear Non-proliferation and Disarmament, 2009), 20.

16. *SIPRI Yearbook 2010*, 342.

17. Alexei Arbatov, ed., *Nuclear Weapons and Russian Security* (Moscow: IMEMO, 1997), 56.

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ground forces were to be moved to storage facilities of nuclear weapons manufacturing plants and to central storage locations for subsequent total elimination. In addition, about 30 percent of NSNW of the Navy, 50 percent of Air Defense, and 50 percent of the aircraft weapons were to be eliminated.

According to official data, by the year 2000, all NSNW of the Navy and the Naval Aviation were removed from ships and submarines and relocated to central storage facilities, with 30 percent of naval tactical nuclear arms eliminated. Also, 50 percent of the Air Force NSNW and 50 percent of the warheads of surface-to-air missiles were eliminated. A large part (although due to the costs of elimination, not all) of nuclear munitions of the artillery, tactical missiles, and mines of the ground forces were also eliminated.¹⁸

According to unofficial estimates, Russia currently has an active stockpile of approximately 2,000 NSNW (Figure 1).¹⁹ These include about 650 tactical nuclear air-to-surface missiles and gravity bombs for 120 Tu-22M3 medium-range bombers and 400 Su-24, Su-27IB and Su-34 tactical bombers. In addition, there are about 240 air-to-surface missiles, gravity bombs, and depth charges of the naval aviation comprising 60 Tu-22M3, 60 Su-24, and 60 Il-38 aircraft. More than 530 NSNW are anti-ship, anti-submarine, and anti-aircraft missiles and torpedoes of surface ships and submarines, including up to 240 nuclear long-range SLCMs of attack submarines. Allegedly, an estimated 630 munitions are assigned to S-300/400 surface-to-air and other air defense missile systems.²⁰ In addition, another 3,400 weapons may be stored as a reserve inventory.²¹

As noted above, in the 1990s, all NSNW of ground forces and air defense, as well as most of the NSNW of the Air Force and the Navy, were redeployed to the centralized storage facilities of the 12th GUMO, where they are kept in active reserve or are awaiting disassembly and disposal. According to declarations by representatives of the Russian military and political authorities, all Russian NSNW are stored at centralized facilities.²²

It is unclear how many NSNW remain in the depots of air and naval bases placed under the management of the 12th GUMO, and how many were redeployed to the initial S-sites. Although their total amount is classified, foreign experts estimate the number of stored weapons slated for dismantlement is approximately 8,000.²³

18. Igor S. Ivanov, "Statement by the Minister of Foreign Affairs of the Russian Federation at the Review Conference of the Parties to the Treaty on the Non-Proliferation of Nuclear Weapons, April 25, 2000," *Diplomatic News (Diplomaticheskoy Vestnik)*, May 2000.

19. *SIPRI Yearbook 2010*, 344.

20. *Ibid.*, 344-48.

21. *Ibid.*

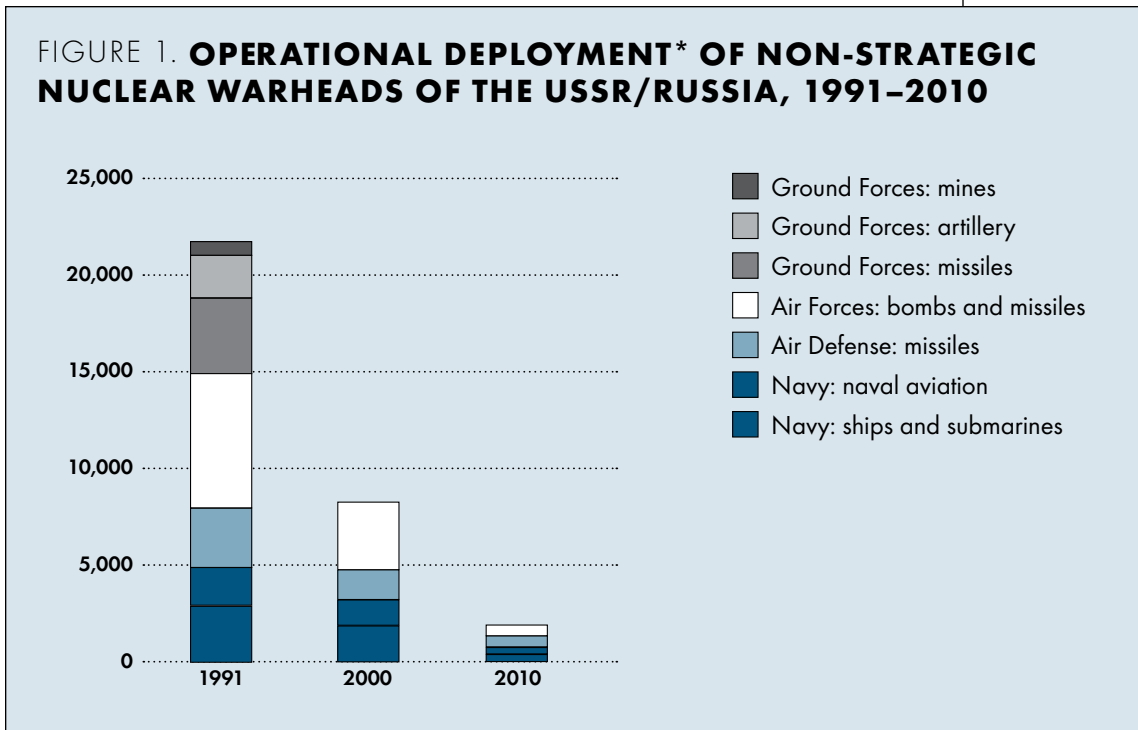
22. Viktor Litovkin, "Security May Only Be Equal," *Nezavisimoe Voennoe Obozrenie*, December 19, 2008, 3; Sergei Ivanov, "Nuclear Disarmament: Is Global Zero Possible?" *Voenna-Promyshlenny Kurier* (no. 6) February 17-23, 2010, 3.

23. *Eliminating Nuclear Threats* (2009), 20.

According to recent unofficial estimates, there are 39 Naval (and possibly also Air Force) nuclear depots, nine centralized S-sites of the 12th GUMO, and two storage locations at manufacturing plants²⁴—plus a Mayak (Cheliabinsk) storage facility designed for 25,000 containers with plutonium and uranium components.

UNCERTAINTIES: Questions remain regarding the method used to calculate numbers of NSNW by independent experts. For example, it is unclear what method was used to count the 2,000 number. Does this include NSNW only at airfields and naval and air defense depots, or also at initial S-sites and manufacturing plants? Because of the lack of reliable information, estimates based on numbers of available delivery vehicles are a possible point of reference. Estimates are also plagued by a broad range of uncertainty, because not all dual-purpose delivery systems (missiles, airplanes, and torpedoes) are equipped and certified for delivering NSNW. On the other hand, aircraft and missile and torpedo launchers may have some nuclear weapons reloading capacity and a corresponding weapons complement.

24. Norris and Kristensen (2009).



*"Operational deployment" means the deployment in depots of bases of Ground Forces, Air Forces, Air Defense, and Navy. Alexei Arbatov (1997), 56.

MODERNIZATION: Russian NSNW are modernized through deploying Iskander tactical ground-mobile missiles that may be equipped with either a nuclear or a conventional warhead.²⁵ In addition, the new Su-34 tactical strike bomber will most probably be a dual-capable aircraft.

Other Nuclear Weapon States

Other nuclear weapon states keep information on their NSNW stockpiles classified. According to unofficial estimates, the People's Republic of China has approximately 100 to 200 such weapons, Israel has 60 to 200 warheads, Pakistan and India have around 100 and 90 respectively, and North Korea has 6 to 10 weapons.²⁶ These estimates include medium- and short-range ballistic and cruise missiles, as well as air-delivered bombs of strike aircraft.

RUSSIAN STRATEGIC PERSPECTIVES

With the Cold War over, Germany united, the Warsaw Pact dissolved, the USSR collapsed, and Soviet troops withdrawn from Central and Eastern Europe, the threat of an attack by general purpose forces was lifted for NATO member-states. Nevertheless, today the United States maintains nuclear weapons on the territories of five NATO member-states.

For Russia, there are a number of considerations with regard to the strategic value of its NSNW. First, with NATO expanding to the East, the past supremacy of the USSR and the Warsaw Pact in general-purpose forces was replaced by the supremacy of NATO over Russia and the countries of the Collective Security Treaty Organization (CSTO), albeit at much lower total force levels. In this light, Russia perceives NSNW primarily as an instrument to neutralize NATO superiority in general-purpose forces, especially in the context of the eastward expansion of the Alliance, which Moscow considers unjustified, unfair, and threatening. This linkage is broadly discussed in Russian political and strategic communities, and it is indirectly proclaimed at an official level.

Second, Russia appears to regard its advantage in NSNW as compensation for the fact that it is now falling behind the United States in terms of strategic weapons—a gap that the New START Treaty will narrow, but not bridge.²⁷ Moreover, due to their range and the possibility of relocation of NATO strike aircraft to forward bases, these weapons may theoretically be delivered deep into Russian

25. See http://nvo.ng.ru/concepts/2005-01-21/4_stability.html.

26. Alexander Pikayev, *Index of Collected Works*, 129–159.

27. In particular, under the new START due to its counting rules and dismantling provisions, the United States will maintain a huge nuclear warhead up-load capacity (up to 2,000 additional warheads), which Russia will lack.

territory and are regarded by Moscow as a supplement to U.S. strategic offensive forces, adding about 13 percent to the 1,550 U.S. START accountable ceiling for strategic warheads. Conversely, Russian NSNW are not capable of reaching U.S. territory (except SLCMs on attack submarines under certain conditions).

Third, Russia regards NSNW (particularly SLCMs and NSNW deployed on medium bombers) as a counterbalance to the nuclear forces of the other nuclear states, Russia's territory being within the range of nuclear weapons of all of these states. Reducing strategic nuclear forces and eliminating medium- and short-range missiles (in the range of 500–5500 kilometers) in line with U.S.-Russia treaties relatively increases the role of Russia's NSNW as a deterrent against seven nuclear powers in Eurasia. Of particular value to Moscow are probably its 180 relatively long-range Tu-22M3 medium bombers and 240 SLCMs on nuclear attack submarines, which do not directly fall in the category of NSNW (and were not included in the PNIs of the early 1990s). No doubt, states like India, Israel, and North Korea are of less real concern, than are the United Kingdom, France, China, and Pakistan, but conservative strategic planning implies taking into account existing and projected capabilities rather than the present political intentions of other states. In particular, China's increasing military power and the 5,000 kilometers of shared border with Russia cannot be disregarded, although this issue has been sidestepped in Russia's official papers for reasons of political correctness.

Fourth, Moscow may perceive its NSNW as a counter to a possible U.S./NATO ballistic missile defense (BMD) system in Europe, if the attempts at cooperative BMD development fail. In this case, the capability to attack BMD sites with NSNW would remove the potential of it degrading the Russian strategic retaliatory potential. Due to the lack of effective precision-guided conventional arms, Russia in its contingency planning is relying on nuclear weapons, including NSNW, for attacking BMD interceptor bases and radars as well as Standard-3 launching ships and naval units protecting them.

Fifth, there is still the issue of NSNW as a counter to U.S. long-range precision-guided conventional weapons (SLCMs and ALCMs) supported by advanced space information systems (reconnaissance, targeting, navigation, and communications). Using Russian NSNW against air and naval bases as well as against surface ships and submarines carrying non-nuclear SLCMs could look to be more of a credible deterrent against an "aerospace attack" than retaliating with strategic nuclear forces.

CONDITIONS FOR NEGOTIATING NSNW

The top priority given in Russia's 2010 Military Doctrine to the danger of NATO expansion and NATO's basic infrastructure toward Russia appears considerably overstated, at least in terms of the threat of an actual armed attack against Russia and its Allies. The increase in the number of NATO member-states has not led to a build-up in the total amount of the Alliance's forces because of the reduced armies

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in several states, particularly the U.S. continental troops, as well as French, German, Italian, Polish, and Spanish armies. Currently, the 28 NATO member-states have a lower overall number of troops and weapons than the 16 NATO member-states of the early 1990s.

Nevertheless, Russia cannot disregard the adverse trends in the balance of military forces both globally and regionally. Simply attempting to persuade Russia that its official perception of these issues is wrong will not relieve Russia's concerns. To do so, steps must be taken to remove these impediments by negotiations and adjusting NATO military policy.

THE "SINGLE CEILING" APPROACH

Within the broad framework for NSNW discussed in the NPR of April 2010 and the NATO Lisbon Summit Declaration in November 2010, both the United States and NATO are now reviewing specific options for addressing NSNW and possible negotiating approaches with Russia.

One approach would seek to include NSNW in the next agreement with Russia, limiting all U.S. and Russian deployed and non-deployed strategic warheads as well as NSNW in storage facilities with a single equal ceiling (possibly with some sub-ceilings). This could also involve relocating Russian NSNW as far as possible from NATO borders, as stated in the NATO Lisbon Summit Declaration.

Advantages

This approach has some advantages. First, it reflects the fact that NSNW in peacetime are not operationally deployed on delivery vehicles unlike most strategic forces. Hence, limiting them implies counting weapons in storage facilities, just like non-deployed strategic warheads, bombs, and ALCMs.

Second, many strategic and non-strategic nuclear warheads are stored together and counting them separately could complicate things by the requirement to distinguish between the two classes (all the more difficult because some are kept in containers).

Third, technically there is no difference between dismantling and disposing (as well as verifying this process) of strategic and non-strategic nuclear warheads (explosive devices).

Fourth, the idea of an equal ceiling with freedom to mix strategic deployed, strategic non-deployed and NSNW in storage facilities and depots is appealing by its simplicity. With equal numbers of strategic deployed warheads for both nations, the United States might opt for a larger quantity of non-deployed strategic weapons, whereas Russia might favor a larger number of NSNWs. In 2010 the United States declared its active nuclear stockpile to be approximately 5,100 warheads. Allegedly, around 500 were NSNW and 2,200 were deployed strategic and 2,400 non-deployed strategic warheads. Hypothetically, if an equal ceiling

were set at an aggregate of 5,000 warheads for each side, then Russia might have a mix of 2,000 NSNW, 2,200 deployed strategic warheads, and 800 non-deployed strategic weapons.

That would more or less correspond to the actual Russian active stockpile and military requirements as assessed by independent experts. This would, however, leave Russia with its present NSNW superiority, which would be opposed by many in the United States and NATO countries. Reducing the ceiling down to 4,000-3,000 warheads would be no problem for the United States (which could just reduce its non-deployed weapons), but would cut into Russian forces more tangibly, presenting a difficult trade-off between strategic and non-strategic nuclear forces.

Deficiencies

As elegant as this model may look at first glance, it does have profound deficiencies. First, a bilateral agreement based on the principle of an equal ceiling would be seen in Moscow as detrimental to Russian security, even if this reduction would imply withdrawing U.S. NSNW from Europe to American soil. Since NSNW are by definition a regional, rather than global (strategic) class of nuclear weapons, an assessment as to their sufficiency and balance should take into account the regional military environment—more like CFE, rather than START. Reducing forces to lower levels of strategic parity with the United States under New START and having eliminated all medium- and short-range ground based ballistic and cruise missiles, Moscow has to rely much more than Washington on its non-strategic nuclear forces for regional contingencies.

No doubt, deterrence does not imply a Russian right to have numerical equality with the sum of all nations capable of reaching its territory with their nuclear weapons. But by the same logic, there is no strategic justification for the United States to insist on equality with Russia in the sum of strategic and non-strategic nuclear weapons taken together. Lagging behind the United States in strategic forces, Russia is unwilling to detract still more from its strategic potential in order to have robust deterrence of nuclear and conventional regional threats.

In practical terms, things are still more complicated. According to unofficial estimates, Moscow currently might enjoy a considerable superiority in NSNW (about 2,000 active weapons) over U.S. forward based NSNW in Europe and the combined nuclear forces of the other seven nuclear weapons states (altogether about 1,000 warheads). The balance, however, largely depends on counting rules—and the result may be different with various methods of calculation.

For instance, counting only U.S. and Russian forward based NSNW outside of national territory would give a balance of approximately 200-0 correspondingly. Taking into account Russian NSNW on its territory (allegedly 2,000) would imply calculating U.S. NSNW on its territory as well. Accepting the U.S. official figure of 5,113 active nuclear weapons and subtracting about 2,200 deployed strategic

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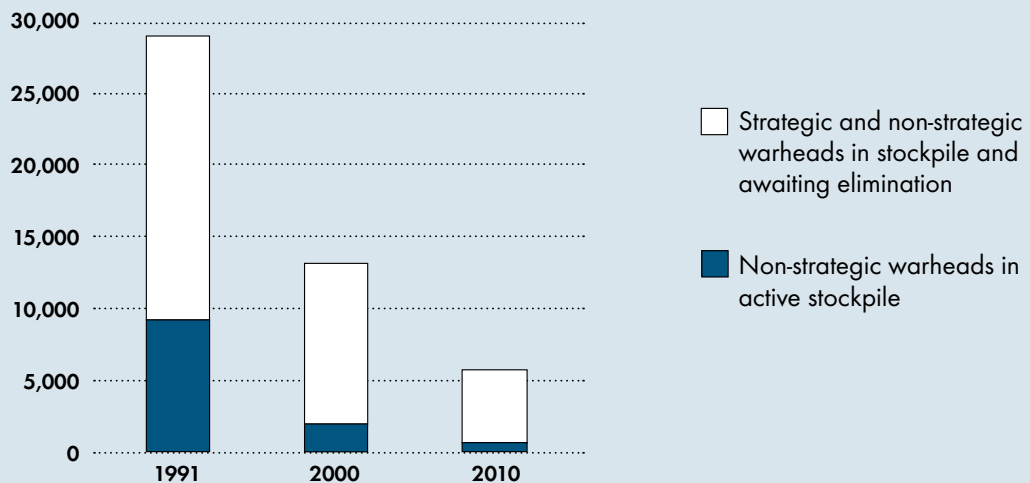
warheads (ICBMs, SLBMs, ALCMs, and bombs), the total remaining U.S. number is about 2,900 strategic and non-strategic weapons. It is not clear, however, how many B-61 and B-83 gravity bombs, deliverable by both strategic and tactical aircraft, are included in this sum, or why several thousand nuclear munitions slated for dismantlement are not included (estimated at 3,500–4,800). Moreover, counting Russian defensive warheads on air-to-surface missiles (allegedly more than 600) may not be viewed as justified in Moscow.

This does not mean these weapons are necessary, and in fact, some respected experts like General Vladimir Dvorkin are proposing their unilateral elimination. Be that as it may, a fair comparison of storage-to-storage and charge-to-charge might demonstrate that Russia's alleged superiority in NSNW is much smaller than commonly perceived. This is all the more so because Russia may be incapable either of differentiating between active and inactive nuclear warheads; non-deployed strategic and non-strategic U.S. munitions; or verifying their numbers under the terms of a possible treaty (Figure 2).

Additional Complexities

Including all nuclear munitions together and limiting them by an equal aggregate ceiling may involve (depending on definitions and verification procedures) dealing with some 15,000 additional U.S. nuclear "pits" (the Russian number is unknown, but probably even larger), or accounting for all nuclear explosive devices

FIGURE 2. U.S. NON-STRATEGIC AND OTHER NUCLEAR WARHEADS IN STOCKPILE



produced, stored, and dismantled in the past. Because those pits may be used to manufacture new nuclear weapons without producing (or using) additional weapons grade fissile material, and because the process of weapons assembly at manufacturing plants would be difficult to limit or verify, those pits would have to be controlled as well (if all assembled or partially assembled nuclear munitions are subject to limitations).²⁸

Whatever the official information provided by the U.S. government on the subject (and satisfactory for independent experts), under the terms of a new treaty, Russia would demand verification. The same relates to U.S. declarations on the planned elimination of nuclear SLCMs. In the context of a new treaty, a statement in the NPR will not suffice: Russia would require the possibility to verify their elimination and ensure that no remaining conventional Tomahawk SLCMs on ships, submarines, and in storage facilities have nuclear warheads.

Protecting Sensitive Information

Setting an overall ceiling and verifying the number of all nuclear weapons implies counting them in depots at military bases, big centralized storage facilities, and storage facilities at manufacturing plants. The latter two types of facilities would be particularly hard to open to inspections: it might involve counting many hundreds or thousands of devices, distinguishing between strategic and non-strategic ones, compromising the secrets of the device construction, and violating the schedules and strict procedures of assembly, dismantlement, and maintenance work, with some safety risks. Hence, any agreed ceiling on NSNW or on strategic and NSNW together, or on the sum of deployed and non-deployed warheads, seems an unrealistic idea, at least in the foreseeable future.

The same goes for verifying the elimination of nuclear munitions, implied by agreed ceilings on warheads, because verifiable and secure procedures for such elimination do not yet exist.²⁹ Moreover, verifiable elimination would be senseless unless manufacturing new weapons is prohibited or limited in verifiable ways, which may require monitoring nuclear munitions production plants, as well as limiting and verifying existing stocks of weapon grade fissile materials (besides banning their production).

28. For instance, according to the American PNI of 1991, all tactical nuclear warheads of the Army were withdrawn from Europe to U.S. territory, but there is no proof that they were all subsequently eliminated. Likewise, if all NSNW of the Navy (except SLCMs) were removed from ships and submarines and approximately 50 percent were subsequently destroyed, what has happened to the other half? Certain assessments estimate that approximately 3,100 B-61 bombs were produced altogether, so where are the remaining 2,700 bombs, besides the 400 presently estimated in storage facilities in the United States and in Europe?

29. The U.K.-Norwegian pilot project on verifiable dismantlement procedures that do not compromise design secrets is an interesting technical experiment, but it falls far short of providing acceptable legal norms and procedures comparable to START dismantling rules and definitions.

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Relocation

As for NATO's 2010 proposal to relocate Russian NSNW away from NATO borders, this raises serious political, technical, and strategic challenges. With regard to the availability of NSNW for combat use, geographic location is much less important than the type of storage facility where the weapons are placed. For example, NSNW located at a Russian centralized "S" site within a hundred miles from a NATO border should be less "threatening" than a NATO airbase with nuclear weapons and strike aircraft located a thousand miles from Russia. Relocating NSNW a few hundred kilometers further away would be senseless in military terms, and would imply building costly new depots and relocating 12th GUMO personnel—all without any clear purpose, except symbolic.

Relocating NSNW to much farther distances, for instance, from storage facilities in Europe (especially from large centralized S-sites) to near the Ural Mountains or in Asia would be prohibitively expensive, slow, and might require building new large storage facilities, closed cities, and all the associated infrastructure. Moreover, it would be politically controversial. For example, China and Japan would certainly object to a significant number of Russian nuclear weapons being transferred from the European to Asian part of its territory.

POSSIBLE SOLUTIONS

Russian emphasis on NSNW is tied to its concerns about alleged threats of NATO conventional forces superiority and U.S. advantages in both strategic conventional systems and BMD systems development. This linkage may be turned to the benefit of NSNW limitations and reductions.

In particular, achieving progress along all three directions—1) Revival of the CFE treaty; 2) Follow-on strategic nuclear and conventional arms limitation and confidence-building measures; and 3) Progress on cooperative BMD development—would be conducive to serious negotiations on NSNW, besides being valuable on their own terms. Moreover, if the next START Treaty envisions reductions down to approximately 1,000 warheads, the removal of U.S. NSNW from Europe should be seen by Moscow as a significant bonus.

Expanding U.S.-Russian and NATO-Russian joint threat assessment activities to include regional nuclear and conventional balances and the role of NSNW might also narrow the gap between Russian and Western security perceptions. The NATO-Russia Council may be one of the forums for such discussions. However, its effectiveness will be rather limited, due to the heavily politicized and public relations-oriented nature of the debates among 29 NRC member-states. Confidential discussions by mixed teams of officials and independent experts, who would be reporting to their governments, would probably produce better substantive results. As for consultations and eventual negotiations on NSNW

limitations, a U.S.-Russian bilateral format would seem to be the best available option, at least at the initial stage.

Due to the specific nature of the design and maintenance of NSNW, in addressing this class of nuclear weapons, the parties will have to deal more with various types of storage facilities rather than the actual weapons.

DEFINING NSNW: The first step could be consultations on defining NSNW, including identifying and addressing many “gray areas.”³⁰ In particular, “operationally deployed” NSNW could be defined as those fixed to launchers or delivery vehicles or in depots within or immediately adjacent to the armed forces’ bases (i.e., within a distance of a few kilometers).

It is easy to envision Russian objections to including Tu-22M3 Backfire medium bombers’ weapons, and Granat RK-55 (RKB-500) nuclear SLCMs. In the past, these weapons were associated with strategic arms treaties, and in the future they may be considered as the only counterbalance to nuclear weapon states in Eurasia within reach of Russian territory (Russian strategic forces are declining in numbers and assigned retaliation missions against the United States). In particular, the connection may be made to French air-launched ASMPA missiles as analogous to Russian HA-22N Buria (AS-4 Kitchen) missiles on Tu-22M3 Backfire bombers. As for nuclear SLCMs, it would be in the U.S. interest to exclude them to avoid the verification problem of distinguishing nuclear from conventional naval cruise missiles on ships, attack and converted strategic submarines, as well as in depots at U.S. and allied bases. As significant as the commitment in the 2010 U.S. NPR to eliminate nuclear SLCMs, verifying that this had been done under the terms of a new arms control treaty would be quite a challenge.

IMPLEMENTING CONFIDENCE-BUILDING MEASURES: The second step may consist of confidence-building measures. For instance, the sides could exchange information on how many and what types of NSNW had been eliminated in line with the PNIs of the early 1990s; what happened to their component parts; and where the weapons are that were withdrawn from the armed forces but have not yet been eliminated. A series of mutual on-sight inspections could be conducted to substantiate the data exchanged and develop new methods of verifying emptied storage facilities and decommissioned nuclear munitions at storage facilities.

INFORMATION EXCHANGES: The third step could be exchanging information on the numbers, types, and location of operationally deployed NSNW (see above) and on the location of the operational depots, along with some sample on-site inspections. The data on the overall numbers and types of NSNW, including those

The first step could be consultations on defining NSNW, including identifying and addressing many “gray areas.”

30. For example, B-61 and B-83 gravity bombs, nuclear SLCMs, medium-range bombers, French strike nuclear capable aircraft, types of storage facilities, defining “inactive” or dismantled munitions, nuclear “pits,” etc.

... the United States would initially withdraw its alleged 200 bombs from six bases in five European countries, whereas Russia would send a total of about 300–400 bombs from the air bases in its territory to central storage facilities.

at centralized storage facilities and manufacturing plants, could also be exchanged as a good-will measure, but would hardly be verifiable.

RELOCATION: The fourth step could involve an agreement on relocating all NSNW from operational delivery vehicles and bases to central storage locations in the national territories (in point of fact, to the reserve). At the airbases where strategic and non-strategic bombers are co-located, verifying this agreement in Russia would be easy, because its heavy bombers are only armed with ALCMs and no other nuclear weapons would be left at the depots, provided that all nuclear gravity bombs for tactical aircraft are removed. American strategic bombers are equipped with ALCMs and B-61 and B-83 gravity bombs. Because the bombs may be delivered by tactical aircraft and because strike airplanes can quickly redeploy to strategic airbases (even if they are not routinely co-located with bombers), under this arrangement all the bombs of either types, or an agreed part of them, should be relocated to centralized storages.

The same applies to NSNW at naval bases, where SSBNs, SSCNs, SSNs, and combat ships are based together. Russian submarines are equipped only with nuclear SLCMs, whereas U.S. converted strategic boats, attack submarines, and ships are equipped with many thousands of conventional SLCMs, externally undistinguishable from nuclear missiles (TLAM-N). Hence, if these are not excluded from NSNW definitions, special verification procedures would have to be devised to ensure that only conventional cruise missiles are on naval vessels and in depots at U.S. naval bases and abroad. The same would apply to other U.S. and Russian naval dual-purpose tactical missiles, torpedoes, artillery shells, depth charges, and gravity bombs (including those for carrier-based aircraft), which were in the past or are at present (as is the case with Russia) serving as nuclear weapons' delivery systems. Russia's "advantage" would be the absence of foreign bases, which may pose a serious problem for verification involving U.S. Allies. The difficulty of verifying naval vessels and depots at bases and greater variety of naval NSNW that remains presently (or were in service in the past) may suggest at the first stage dealing with Air Force NSNW, and then proceed with the Navy.

In this context, the United States would initially withdraw its alleged 200 bombs from six bases in five European countries, whereas Russia would send a total of about 300–400 bombs from the air bases in its territory to central storage facilities. Incidentally, the principle of equal security would require not only relocating the U.S. NSNW to its national territory, but banning their presence at the air bases (and, subsequently, at the naval bases) or in any areas, other than central storage locations which would be specifically designated. Completely withdrawing operationally deployed Air Force (and later Naval) NSNW from forward bases is easier to verify—the storage facilities of known locations and characteristics would simply be empty, mothballed and unguarded.

Of great help would be an agreement on short-notice challenge inspections (similar to those agreed for strategic offensive weapons for the bases of ICBMs,

SLBMs, and heavy bombers) at air and naval bases in the territories of Russia and the United States. Sample inspections at ground forces' bases, where NSNW were deployed in the past, similar to those conducted under CFE, may also be required. Verification will likely be needed in the national territories of U.S. and Russian Allies, where such weapons had previously been located. Therefore, in practical terms, the potential agreement may be a more complicated and delicate issue for Washington than Moscow, and may require greater effort on the U.S. side.

Relocation to central storage facilities would remove NSNW from their forward positions and ensure greater security against their acquisition by terrorists, as well as against unauthorized relocation or use. At the same time, this way of dealing with the problem would avoid extremely difficult and controversial problems associated with counting and verifying nuclear munitions at centralized storage facilities and at manufacturing plants, as well as verifying their dismantlement and banning the production of new weapons. Some S-sites are relatively close to NATO borders; however, they should be of no concern to the alliance if they are located away from air and naval bases of Russia. Moving NSNW back to forward positions by trains or ground transportation would take longer for Russia than flying NSNW back to Europe from the United States. Challenge inspections at naval and air bases' depots would be insurance against tacit violations involving significant numbers of NSNW.

This option would also make it easier to resolve disagreements over the bilateral-multilateral format of the agreements; equality-asymmetry principles of limitation; and the delineation between strategic-tactical, and deployed and non-deployed status of the warheads. Under this proposed arrangement, Russia theoretically would be able to return NSNW to the armed forces if there is a security threat on the country's western or eastern borders. Likewise, NATO would theoretically be capable of a similar response. However, provided reliable verification of operational storage facilities, such a step would take a long time, would be visible for both sides, and would not take any of them by surprise. Moreover, according to the Pentagon and Russia's senior military officers, this will not imply serious expenditures because a large part of NSNW has already been removed to central storage locations in Russia and to storage facilities in the United States.

At centralized storage facilities, NSNW would in fact be safely kept in reserve until the disarmament process extends to eliminating nuclear warheads and using nuclear materials for peaceful purposes. Eliminating nuclear explosive devices per se would imply a qualitatively new kind and format of nuclear disarmament and verification, as well as much better political relations and resolution of many other security issues among nuclear weapon states.