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*Anne Finger, Oliver Meier*

## **Confidence-building on tactical nuclear weapons: What's on the table?**

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## Introduction

This paper provides a cursory overview of existing proposals to build confidence and increase transparency on tactical nuclear weapons (TNW) in Europe. It focuses on recent proposals, tabled since the end of the East-West conflict.

After a short review of definitional problems and a brief description of the context of current discussions on TNW, the paper describes some cross-cutting issues identified in studies on confidence-building measures (CBMs). We then categorize existing proposals with a view to identifying possible ways forward on confidence building between NATO and Russia. We do not attempt to provide a comprehensive review of existing proposals. Our goal is to highlight some relevant issues and problems discussed in the current literature on CBMs in the context of nuclear arms control.

Generally, CBMs are aimed at

- (a) “reassuring states of the non-aggressive intentions of their potential adversaries and reducing the possibility of misrepresentation of certain activities;
- (b) narrowing the scope of political intimidation by the forces of the stronger power; and
- (c) minimizing the likelihood of inadvertent escalation of hostile acts in a crisis situation.” (Goldblat 2003: 10)

These functions also apply, to varying degrees, to CBMs on TNW. Hence, the focus here is on those measures that fall short of including TNW under a future arms control agreement. To be sure, some confidence-building measures could also be described as security building measures. Yet, because the term confidence-building measure is now commonly used as the overarching concept, we also use this term.

Two categories of CBMs are distinguished. First, *transparency measures* are aimed at promoting “better communication and understanding among the parties”. Such measures may include the (reciprocal) release of information about the status of TNW and steps to allow direct observations of declared information, for example through observers or on-site inspections. Second, there are CBMs that *impose some military constraints on parties* (Goldblat 2003: 11), which include measures to relocate weapons, change their alert status or reach understandings on changes to nuclear doctrines.

A distinct set of CBM proposals is related to the safety and security of nuclear weapons. These measures may involve instruments similar to those considered under other CBMs. Yet, cooperation on safety and security is not primarily focused on military aspects related to TNW deployments. Rather, its main goal is to jointly decrease the risks associated with the handling and operation of TNW. (NATO 2000, Gottemoeller 2008, Nunn 2010, Robertus 2011) Confidence-building is, then, a side-effect of such cooperation.

### ***Why CBMs are in the focus***

There are several reasons why confidence-building measures are seen by many as the next step in the process of reducing the importance of tactical nuclear weapons. There is a general recognition that the conclusion of a formal, legally-binding agreement that provides for the verifiable reduction or elimination of TNW will take time. In the meantime, CBMs can be a useful interim step because they are easier to agree upon, mainly due to their informal nature. This applies especially to unilateral measures and those that do not entail legally-binding obligations or verification arrangements.

The Obama administration remains committed to including TNW under a future arms control accord with Russia that would then cover all categories of nuclear weapons. Acting Under- Secretary of State, Rose Gottemoeller, has cautioned against expectations that such an agreement might be achievable soon:

“While we still have much homework to do, we can begin talking with Russia about some big concepts, important ideas and the definitions that go with them. We are not ready for the negotiating table, but we are ready for conversation. In addition to starting the conceptual conversation, we would also like to increase transparency on a reciprocal basis with Russia. We are in the process of thinking through the types of transparency measures that might be helpful and how they could be implemented. We will consult with our NATO Allies on the development of transparency initiatives, as well as the next steps more broadly. (...) We have a lot of very complicated issues to consider, so the more creative and innovative ideas we have to work with, the better off we will be.” (Gottemoeller 2011)

CBMs can help to pave the way towards inclusion of TNW under a future U.S.-Russian arms control accord in several ways. During discussions on CBMs, both sides could agree on definitional and conceptual issues. (Gottemoeller 2011a) In addition, such measures could help to assess some of the verification and monitoring instruments and procedures that could be used under a New START follow-on accord. Specifically, while the verification regimes of strategic arms control treaties have mainly provided for the monitoring of delivery systems, an agreement on TNW would likely have to involve measures for accounting for nuclear warheads themselves. This is because many of the delivery systems associated with tactical nuclear weapons are dual-use and can be used for conventional as well as nuclear war-fighting.

CBMs and transparency measures can also help to improve political relationships between conflicting parties by increasing confidence in the reliability and trustworthiness of the other side. Thus, CBMs might contribute to reassuring Central and East Europeans that Russia does not intend to use its TNW to threaten or coerce NATO. *Vice versa*, such measures could help reassure Moscow that the remaining U.S. tactical nuclear weapons (in Europe) are not aimed at Russia but mainly serve political and symbolic functions. In confidence-building, the process of discussing and implementing specific measures can be just as important as the outcome of such deliberations.

By being more open about TNW, Russia and the United States could also use CBMs to demonstrate their commitment under the nuclear Non-Proliferation Treaty (NPT) to include all nuclear weapons, regardless of their types, in future disarmament accords.<sup>1</sup>

Finally, such measures could impact the security of weapons and protect them and related materials from terrorist attack. On the one hand, there are fears that transparency measures could reduce security by broadening access to sensitive information. On the other hand, CBMs might provide an impetus to focus political attention on the safe and secure storage of TNW or they could result in relocation to more secure locations altogether, for example by repatriating nuclear weapons to the territory of the possessor state or by moving them to fewer, centralized, and presumably more secure storage sites.

### ***The arms control context of current discussions***

Several nuclear arms control-related agreements and announcements provide the basis for the most recent discussion on transparency and CBMs. In the *Presidential Nuclear Initiatives* (PNIs) of 1991-92, the United States and the Soviet Union/Russia acknowledged that reductions of TNW are a pressing international problem and pledged radical steps to reduce the importance of tactical nuclear weapons. The PNIs could also “be understood as an indirect recognition that nuclear weapons were no longer useful for war-fighting, even though the possibility of using nuclear weapons remained a component of the military doctrines of the nuclear-weapon powers.” (Goldblat 2003: 99)

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<sup>1</sup> In the Final Document of the 2010 NPT Review Conference, the nuclear weapon states were called upon to “[a]ddress the question of all nuclear weapons regardless of their type or their location as an integral part of the general nuclear disarmament process”. Final Document of the 2010 Review Conference of the Parties to the Treaty on the Non-Proliferation of Nuclear Weapons, NPT/CONF.2010/50 (Vol. I) (New York, 2010), Action 5(b).

Specifically, both sides pledged to reduce numbers, change deployment patterns and withdraw certain tactical nuclear weapons from military service. The United States also provided rudimentary transparency measures by releasing some numbers on TNW holdings. (Handler 2002) To this day, the PNIs provide an important yardstick against which to measure any future CBMs. They “instituted the most sweeping nuclear arms reductions in history” (Koch 2012: 21), yet remarkably the United States announced the PNIs without any prior agreement with Russia on reciprocity.

In 1997, NATO allies unilaterally adopted another important CBM by declaring that “they have no intention, no plan and no reason to deploy nuclear weapons on the territory of new members, nor any need to change any aspect of NATO’s nuclear posture or nuclear policy - and do not foresee any future need to do so.” (NATO 1997) The “*three Nos*” are seen by Russia as an important basis for a future dialogue on nuclear arms control.

The *START treaties* separated TNW as a distinct arms control issue. In fact, most analysts use a negative definition of TNW by subsuming under this term all nuclear weapons that are not covered by the (New) START and Intermediate-range Nuclear Forces (INF) treaties. This definition on TNW is also used here, though it does not solve the problem of the dual-use nature of some TNW warheads and most delivery vehicles. A number of CBMs, such as those on demating or dealerting, do differentiate between applicability to warheads and/or delivery vehicles, while others do not.

With the conclusion of the New START treaty on April 8, 2010 and its subsequent entry-into-force on February 5, 2011, the question of the scope of a follow-on agreement became imminent. At the same time, reductions of tactical nuclear weapons were discussed in the context of the NPT review conference in May 2010.

The role of tactical nuclear weapons in NATO’s deterrence posture and the question of reciprocity in further reductions were contentious issues in the run-up to NATO’s November 2010 summit. These questions were not settled in the new Strategic Concept, agreed upon at Lisbon, and NATO allies continued debates in the context of the Deterrence and Defense Posture Review (DDPR). According to Steven Pifer and Michael O’Hanlon, “a menu of eleven transparency and confidence building measures that might be explored with the Russians” was discussed among NATO allies ahead of the Chicago summit, but this list was not published “in the belief that first engaging the Russians privately on the proposal might increase the likelihood that Moscow would take up some of them.” (Pifer/O’Hanlon 2012: 101)

The DDPR report, adopted May 20, 2012 at the Chicago summit, provides the current Alliance framework for engaging Russia on TNW. In the report, Allies state that they “look forward to continuing to develop and exchange transparency and confidence-building ideas with the Russian Federation in the NATO-Russia Council, with the goal of developing detailed proposals on and increasing mutual understanding of NATO’s and Russia’s non-strategic nuclear force postures in Europe.” (NATO 2012: paragraph 25)

In Chicago, NATO also decided to establish a new arms control body “as a consultative and advisory forum” (NATO 2012: paragraph 30). The mandate of the new “Special Advisory and Consultative Arms Control, Disarmament and Non-Proliferation Committee” was agreed upon on February 8, 2013, after some nine months of dispute over its terms of reference. The primary task of the committee will be to advise NATO on how to build confidence on TNW with Russia. The committee will also provide a forum for consultations on possible nuclear reductions in the context of a U.S.-Russian dialogue on post-New Start cuts and it could become a venue for discussing arms control, disarmament and nonproliferation in a broader context. (Meier 2013)

Against the background of these developments, the issue of tactical nuclear weapons control and disarmament has been the focus of dozens of recent studies, articles and non-papers by NATO members and officials. The contributions to the debate on confidence-building address the many interrelated military, political, technical, financial, social, and psychological factors that make reductions of tactical nuclear weapons so important and, at the same time, so difficult to achieve. Contrary to some expectations, the political and academic interest in TNW control after the Chicago summit has not declined and options for developing confidence-building and transparency measures remain the focus of discussions among experts and decision-makers. (Miasnikov 2013: 2) This is an

indication of the importance of TNW for European security and proof of the broad interest in the successful continuation of the nuclear disarmament process.

### **Transparency and confidence-building: some cross-cutting issues**

A number of issues cut across many, though not all, proposals for CBMs on TNW made in recent studies on next steps in nuclear arms control. Most of these issues involve trade-offs. Generally, measures that appear to be easier to agree upon are also less meaningful from the perspectives of political reassurance or military *détente*.

#### *Timing*

Most studies argue that confidence-building measures should be pursued incrementally, beginning with those that are easiest to agree upon and/or implement, either because they require little or no change from current military practice or because they are seen as less intrusive. The underlying assumption is that successes at “lower levels” of confidence-building, such as transparency, will then facilitate agreement on more demanding measures, including steps that affect the deployment of weapons.<sup>2</sup> Yet, it is noteworthy that the PNIs are an example of far-reaching measures that have imposed a number of fundamental changes to the nuclear postures almost simultaneously and almost without information, let alone consultation, either among NATO allies or between the United States and Russia.

#### *Geographical coverage*

The focus of most studies and proposals is on Europe because most TNW are deployed on the territory of European NATO members and in the European part of Russia. Several studies raise the implications of possible arms control and reduction measures for nuclear stability and security in Asia. Thus, proposals to relocate Russian weapons east of the Urals might raise concerns by China and Japan. While this problem of simply “shifting” the issue to another geographic region will become particularly acute under a new arms control accord that covers TNW, it can also be relevant to CBMs. There is broad agreement that a global approach to TNW is ultimately preferable to a regional accord, though such a comprehensive agreement will be much more difficult to obtain.

#### *Reciprocity & specificity*

Against the background of the discrepancies in military capabilities between NATO and Russia, the problem of reciprocity is a major hurdle on the way to new CBMs. While NATO’s conventional capabilities are vastly superior to Russia’s, Moscow has a numerical advantage in TNW holdings. Russia therefore maintains that NATO has to move first on a range of issues that affect the overall balance between the two sides. (Lavrov 2011) This reluctance by Russia to enter into a dialogue on confidence-building is viewed by most analysts as the single biggest obstacle to a reduction of the importance of TNW. (Zagorski 2011)

NATO allies, on the other hand, insist that in any future reductions, the Alliance’s

“aim should be to seek Russian agreement to increase transparency on its nuclear weapons in Europe and relocate these weapons away from the territory of NATO members. Any further steps must take into account the disparity with the greater Russian stockpiles of short-range nuclear weapons.” (NATO 2010, paragraph 26)

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<sup>2</sup> A notable exception is Rose Gottemoeller who has argued that substantive CBMs could precede data exchanges. (Gottemoeller 2008)



This language reflects the preference of some NATO members to link progress on TNW to other collective defense instruments, such as conventional reassurances and missile defenses. (Thränert 2009-2010) It is in this context that the Deterrence and Defense Posture Review (DDPR) was established with a broad mandate, “to review NATO’s overall posture in deterring and defending against the full range of threats to the Alliance, taking into account changes to the evolving international security environment.” (NATO 2010, paragraph 19)

Some authors argue that reciprocity is now a necessary precondition for new CBMs because both sides currently lack the will, and maybe the political capacity, to act unilaterally. Others argue that unilateral steps can and should be taken because of the inherent benefits of CBMs for European and global security and/or because the military value of TNW has shrunk. According to this view, TNW should not be viewed in terms of the give-and-take of a formal arms control setting. (Kristensen 2011; Meier/Ingram 2010) Former U.S. Senator Sam Nunn takes a position in the middle by arguing that reciprocity should be “measured broadly.” Such an approach, he argues, would “allow the United States and NATO to take meaningful steps in nuclear risk reduction, mindful of the interrelationships with Russia but not rigidly linked.” (Nunn 2011: 21)

Though the PNIs were unilateral by nature, some believe that they were politically acceptable only against the background of the general optimism that was present at the end of the Cold War. Several analysts pin their hopes on a formalization of the PNIs and the adoption of similar unilateral, reciprocal steps.

CBMs could also be limited to certain categories of weapons. Hans Kristensen, for example, considers it helpful to focus initially on air-delivered non-strategic nuclear weapons as they represent an area of some compatibility between Russia and the United States and because of the range of their delivery systems. Both countries operate air-based TNW forces that are similarly structured and roughly equal in size. Kristensen believes that CBMs could build on the information exchanges and verification procedures for heavy bombers agreed upon under the New START treaty. CBMs focused on air-delivered TNW could, at a later stage, be expanded to include other nuclear weapon states, such as France and China. (Kristensen 2013: 9-10)

### *Verifiability*

CBMs do not have to be verifiable and the importance of verifiability depends on the kind of measure under consideration. But the value of CBMs is increased if there are ways to monitor their implementation. Thus, some view the PNIs as meaningless or even counterproductive instruments because of the lack of any monitoring mechanism. While there are few doubts that the United States has implemented its obligations under the PNIs, there are continuing questions about the degree to which Russia has fulfilled its promises.

Naturally, CBMs affecting numbers and locations of CBMs can more easily be verified than policy statements, for example, on the readiness of nuclear weapons or doctrines of nuclear use. In the latter category, confidence in implementation can be increased through an ongoing dialogue in which the participants explain and discuss their policies.

### *Political venue*

The significance of arms control agreements depends not only on *what* is agreed, but often also *in which context* or *institutional setting* agreement is reached and *by whom*. With respect to CBMs, three possible venues are under discussion.

Since most TNW are held by the United States and Russia, many analysts believe that *direct talks* between the two sides are the most promising way to make progress. Often, these proposals for bilateral CBMs are aimed either at the formalization of the existing PNIs or the announcement of additional, unilateral reciprocal steps by the two governments.

While the Russian government is largely free of Alliance restraints, the Obama administration has stated that it will consult within NATO on any changes of its nuclear posture related to TNW. This is

because some NATO allies still view nuclear sharing as an important symbol of burden sharing and a significant transatlantic link. These states have been reluctant to endorse steps that would not be reciprocated by Russia and they are likely to continue to hold this view.

The NATO-Russia Council (NRC) has been proposed as the most likely venue to discuss additional transparency or confidence-building measures *between NATO and Russia*. Thus, Rose Gottemoeller has recently stated that “information exchanges and discussion of confidence building measures on [non-strategic nuclear weapons, NSNW] could take place in the NATO-Russia Council or they could occur in other venues such as the bilateral track.” She clarified, however, that any further discussion of reductions is expected “to take place on a bilateral track.” (Gottemoeller 2013)

Polish Undersecretary of State H.E. Bogusław Winid has raised the possibility of creating “a brand new format” (Winid 2013: 5) to pursue CBMs between NATO and Russia. Similarly, Alexander Kolbin has argued that a new informal NATO-Russia forum (within the NRC framework) could be installed instead of “strictly official negotiations.” (Kolbin 2013: 6) Jacek Durkalec also points out that “[t]alks on [transparency and confidence-building measures] do not have to resemble traditional negotiations in which one side presents its proposal and the other a counterproposal. Different ideas and possible solutions could emerge from joint teamwork between NATO and Russia officials or 1.5 track discussions.” Durkalec argues that “the process itself may be as valuable as the final outcome.” (Durkalec 2013: 4)

CBMs on TNW could also be discussed among a *different set of nuclear powers*. Thus, the five permanent members of the United Nations Security Council (P5) – China, France, Russia, the United Kingdom and the United States – have begun to discuss the possibility of low-level confidence-building measures on nuclear weapons. One purpose of this dialogue is to pursue technical talks on verification and transparency of reductions. Toward this end, the P5 at their second meeting from June 30-July 31, 2011 in Paris agreed to “continue working on an agreed glossary of definitions for key nuclear terms and established a dedicated working group.” (Ministère des Affaires Étrangères 2011) As part of the dialogue a third meeting took place in Washington in June 2012 where the P5 “continued their previous discussions on the issues of transparency, mutual confidence, and verification”. The United States briefed participants on activities at the former nuclear test site in Nevada and offered a tour of the U.S. Nuclear Risk Reduction Center. (Gottemoeller 2012)

Moscow has stated repeatedly that it would prefer to tackle the issue of tactical nuclear weapons in a broader setting. “Unlike the United States, Russia has other neighbors with nuclear capabilities, and it cannot ignore this factor, so that NSNW is more a multilateral issue than a bilateral one.” (Miasnikov 2013: 2)

### *Confidentiality*

Most proposals, particularly those put forward by officials and diplomats, assume that any dialogue on confidence-building and transparency measures would be conducted on a confidential basis. As a default option, access to information declared about TNW stockpiles would be limited to the U.S. and Russian governments or, in the case of a NATO-Russian dialogue, to the governments involved. No government to date has released any precise information about operational TNW stockpiles, but both sides have spoken in relative terms about past reductions. NATO officials have also stated that the United States still deploys “a few hundred” TNW in Europe. Some authors argue that, in the future, certain information about TNW stockpiles could and should be declared publicly in order to increase the confidence-building value of transparency measures, to increase assurances within NATO or to increase the legitimacy of current postures. While operational doctrines remain highly classified, debates about the political principles underpinning such doctrines, such as negative assurances, have always, to some degree, taken place publicly.

## **Categorizing transparency and confidence-building measures**

This section intends to describe some examples of the types of measures that have been proposed under the two categories of CBMs, *transparency* measures and measures that *impose some military constraints on parties*.

### ***Transparency measures***

#### ***Information on the presence and absence of TNW***

As TNW have never been subject to any arms control agreement – with the partial exception of the INF treaty – there is significant uncertainty over the size, location and status of inventories. Moreover, because TNW have not been the object of any formal arms control accord between the United States and Russia, a dialogue on definitions and terminology between the two sides has been proposed as a first step:

“[W]e need to start talking now about preparations for the next negotiations. What kinds of concepts are we going to need to wrestle with this time? [The Russians] identify non-strategic nuclear weapons differently than we do, so there are some definitional and terminology issues we have to talk to them about.” (Gottemoeller 2011a)

There is broad support for measures aiming at a general exchange of information about TNW holdings. U.S. National Security Advisor Tom Donilon in March 2011 said that “as a first step” the United States “would like to increase transparency on a reciprocal basis concerning the numbers, locations, and types of nonstrategic forces in Europe.” (Donilon 2011) The non-paper tabled by ten NATO states one month later at the NATO Foreign Ministers meeting in Berlin, expands that lists to information exchanges between NATO and Russia on numbers, locations, operational status, command arrangements and level of warheads storage security. The paper also suggests that both sides could consider notifying “on a voluntary basis and in good faith...within the NRC of any plans to move tactical nuclear weapons.” (Non-Paper by Poland, Norway, Germany, Netherlands, et al., 2011) In addition, the development of a standard reporting form has been proposed.

Many proposals also focus on information exchanges on the implementation of the PNIs, including information such as the number of total warheads eliminated since 1992. (Diakov/Miasnikov/Kadyshev 2011) James Acton and Michael Gerson suggest developing protocols for verifying at least certain aspects of the PNIs as a good starting point for later negotiations of a legally-binding agreement. (Acton/Gerson 2011) Alexei Arbatov proposes making data exchanges specific by extending them to declarations about locations of component parts of dismantled warheads. (Arbatov 2011: 169)

The Euro-Atlantic Security Initiative (EASI) proposes that both sides could “publicly disclose the total number of their non-strategic nuclear warheads in storage and the number of warheads in the dismantlement queue, the types of delivery systems and numbers of warheads for each type of delivery system.” (EASI 2012: 4-5) Several experts support unilateral action by NATO and declaration of TNW-related information by NATO: “One way to proceed would be for the United States to issue a statement on its own, or on behalf of NATO, in conjunction with unilateral withdrawal of tactical nuclear weapons [from Europe] in which it would disclose basic information about its stockpiles (including those on U.S. territory) and invite Russia to respond in kind.” (Pomper/Potter/Sokov 2010: 88) Karl-Heinz Kamp argues that NATO should not only release numbers of its TNW holdings but also broaden the scope of transparency measures: “In particular, the numbers of American and British submarine-launched nuclear missiles should be made public in order to convince those NATO members looking for nuclear reassurance that NATO has a credible, flexible and survivable nuclear posture beyond the heavily disputed B-61 arsenal.” (Kamp 2010: 12)

Anatoli Diakov, Eugene Miasnikov and Timur Kadyshev have made an elaborate proposal for transparency measures to be implemented in two phases. They suggest that U.S. and Russian TNW

arsenals could be divided into two categories. “The first category could include those [non-strategic nuclear weapon] warheads which stay in storage but can be deployed in case of need. The second category could include warheads whose lifetime is over and which are programmed for elimination.” (Diakov/Miasnikov/Kadyshev 2004: 57)

In a first phase, parties would declare numbers and storage sites of deployable warheads. In addition, they would exchange information on nuclear planning. During the second phase, visits to storage facilities should be undertaken to confirm warhead numbers and provide the other side with evidence of warhead dismantlement. Also, the authors suggest close-out visits to sites where warheads have been completely dismantled. (Diakov/Miasnikov/Kadyshev 2004)

Arbatov also proposes a step-by-step process with discussions on definitions, to be followed by data exchanges related to the implementation of PNIs. These could be verified through mutual on-site inspections (OSIs) at closed-out storage or deployment sites. A third step would include data exchanges on active NSNWs which could be checked through random OSIs. (Arbatov 2011: 169-170)

### *A dialogue on nuclear doctrines*

In addition, several studies suggest initiating a dialogue on nuclear doctrines. Thus, the Euro-Atlantic Security Initiative has proposed that the United States and Russia could “clarify the purpose of their nonstrategic nuclear weapons and why they believe they need to have the number they maintain.” (EASI 2012: 5) The April 2011 non-paper, tabled by ten NATO members, specifically suggests an “NRC seminar on nuclear doctrines, with special emphasis on TNW. Such a seminar could take place in Poland in the first quarter of 2012.” (Non-Paper by Poland, Norway, Germany, Netherlands, et al., 2011) The February 7-8, 2013 seminar on confidence-building measures that took place in Warsaw is seen by some as a belated implementation of that proposal.<sup>3</sup>

Some experts suggest other declarations on the roles of TNW to build confidence. The NATO Group of Experts in 2010 had suggested that “NATO should invite an ongoing dialogue with Russia on nuclear perceptions, concepts, doctrines, and transparency.” It also proposed that NATO members “should convene a Special Consultative Group in order to inform and coordinate its internal dialogue about nuclear-related issues.” (NATO 2010a: 44). Some believe that NATO’s new “Special Advisory and Consultative Arms Control, Disarmament and Non-Proliferation Committee” could and should fulfill the latter role.

### *Constraints on military capabilities*

A second category of CBMs comprises measures imposing military constraints on parties, including *geographic restrictions*, *restrictions of capabilities*, and *restrictions on the use of TNW*.

#### *Geographic restrictions*

Many official and expert papers mention proposals to consolidate TNW at fewer sites and facilities, though the two sides apparently use different concepts of central storage. While Russia appears to define central storage in terms of institutional responsibility for nuclear weapons, NATO members prefer to focus on the geographic aspects of central storage and push for a reduction of the number of sites where TNW are located. (Zagorski 2011: 7)

Another proposal for a geographic restriction on TNW deployments is the idea to turn NATO’s “three Nos” of 1997 into a legally binding obligation. (Diakov/Miasnikov/Kadyshev 2004; Anthony/Janssen 2004)

Russia makes it a precondition for any progress on TNW that all nuclear weapons must be deployed on the national territory of the possessor states. In addition, Moscow has proposed that the

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<sup>3</sup> See <http://www.pism.pl/Events/The-Warsaw-Workshop>.

infrastructure in non-nuclear weapon states that could support the deployment of such weapons be permanently dismantled. (Lavrov 2011) As NATO is the only alliance that practices nuclear sharing and the United States is the only nuclear weapon state that still deploys nuclear weapons on the territory of non-nuclear weapon states, this proposal is clearly aimed at NATO, though it could be universalized and transformed into a general prohibition of the deployment of nuclear weapons on the territory of NNWS, for example in the context of the NPT. (Meier/Ingram 2010)

East and Central European countries, on the other hand, insist that Russian TNW be moved away from their borders before the Alliance considers any further changes of its nuclear posture. NATO has taken this request on board in its new Strategic Concept. (NATO 2010)

To support such a process, it has been proposed that both sides could agree to inspect bases from which TNW have been withdrawn and which have been decommissioned for TNW deployments. Such “close out” activities could be door-openers for more sensitive activities at active sites and could also be prepared by meetings on de-certification procedures. (Diakov/Miasnikov/Kadyshev 2004)

Fredrik Lindvall et al. have developed an elaborated approach for a geographic restriction on TNW storage and deployments. They propose starting with a partial withdrawal from a number of sites in the region of the south-eastern Baltic Sea. To implement this idea, after having achieved basic transparency and less threatening postures for TNW, arsenals would have to be limited through ceilings on numbers, types and locations (in the context of a legally-binding treaty). Both sides could then sequentially reduce the size of their arsenals. Negotiations would take place bilaterally between the United States and Russia, though the perspectives of European NATO members should be taken into account from the outset. At a later stage, non-deployed nuclear weapons and production facilities should be included. To lower the hurdles for a partial withdrawal of TNW, storage facilities might be kept operational under supervision for a certain period. (Lindvall et al. 2011)

### *Restriction of capabilities*

Other proposals aim to directly restrict military capabilities. Many authors agree on the necessity for the United States and Russia to take steps to build confidence that retired warheads awaiting dismantlement will not be returned to active service. Acton and Gerson for example propose “to store warheads awaiting dismantlement separately from active warheads and only at certain designated storage areas.” (Acton/Gerson 2011: 16) This could be complemented by a pledge not to remove warheads from storage sites and not to reactivate retired warheads. By agreeing to not move weapons between categories of deployed and non-deployed weapons, any new buildup of deployed warheads could be prevented. (Diakov/Miasnikov/Kadyshev 2011)

To support this approach, the number of warheads in the dismantling process as well as the number of warheads already dismantled could be declared periodically. Eventually, both sides could agree on inspections to verify that information. (Acton/Gerson 2011) It is to be noted that Russia internally classifies the readiness of nuclear weapons in at least four different categories. (Sutyagin 2012: 11-12) This appears to be a different classification system from the one used by the United States and it may be necessary to reach an understanding that makes the different systems comparable.

Additionally, many authors stress the necessity of unilateral commitments by Russia and the United States not to carry out research on and development and production of new types of TNW warheads. (Diakov/Miasnikov/Kadyshev 2004) The Euro-Atlantic Security Initiative has also suggested that “[a]s a minimal step, the United States and Russia might consider announcing that each will not increase the number of its nonstrategic nuclear warheads.” (EASI 2012: 6) In this context, there has been the proposal of a moratorium on the deployment of new types of weapons or delivery systems, either on a negotiated or unilateral basis, pending the agreement of an arms control accord that covers TNW. (Diakov/Miasnikov/Kadyshev 2004; Meier 2011) This could be complemented by a pledge not to modernize existing TNW, though this might raise the issue of the Life Extension Program for the B61 bombs deployed under NATO nuclear sharing.

### *Assurances and restrictions on use*

Several authors suggest that both sides, as a confidence-building measure, should start a dialogue on nuclear doctrines, as one way to avoid misperceptions and to lessen the risks of worst case-planning. This could be complemented by steps to reduce the alert status of nuclear weapons.

In 1997, NATO and Russia already promised to conduct “reciprocal exchanges, as appropriate, on nuclear weapons issues, including doctrines and strategy of NATO and Russia.” (NATO 1997) NATO’s CBM report of 2000 calls for an information exchange “regarding the readiness status of nuclear forces” including a “generic description of alert status.” (NATO 2000: 23)

Many more recent proposals echo this call by arguing for a dialogue on nuclear policy issues. Alexander Kolbin has proposed that both sides “confirm the absence of any military role assigned to their NSNW arsenals deployed in Europe.” (Kolbin 2013: 6)

Some go further and call on NATO and Russia to expand their negative security assurances. Thus, the German Commissioner for Arms Control and Disarmament, Rolf Nickel, calls on NATO to adapt its declaratory policy to the U.S. posture (Nickel 2011, see also NATO 2010a, Chalmers 2011). Others believe that both sides should adopt a sole purpose or even no-first-use posture. (Meier/Ingram 2010) Vladimir Kozin also suggests that both sides “pledge not to use nuclear weapons in a first strike against each other – embracing both TNW and strategic offensive nuclear arms.” (Kozin 2013: 4)

The alert levels of TNW could be reduced by taking steps to extend the time needed to mate warheads with delivery vehicles. The EASI commission has proposed that both sides “might consider as a confidence-building measure formal statements affirming that nuclear warheads have been demated from their nonstrategic delivery systems and, as a matter of policy, that there is no intention of placing nonstrategic nuclear warheads on delivery systems in the future.” (EASI 2012: 5) If combined with advance notifications of warhead movements to bases or delivery vehicles (possibly aided by sensors), such announcements could build confidence that TNW are not being readied for use. (Potter/Sokov 2004)

### *Cooperation on Weapons Safety and Security*

CBMs related to the safety and security of TNW could be well suited to demonstrate that NATO wants “to see a true strategic partnership between NATO and Russia.” (NATO 2010: paragraph 33) Such measures would have the goal of jointly decreasing the risks associated with the storage, handling and operation of TNW. Confidence-building, then, is a side-effect of such cooperation, which does not aim to affect the military balance between NATO and Russia and does not view TNW as part of that balance.

There have been various proposals on the exchange of information related to the safety and security of nuclear weapons. In the NATO-Russia Founding Act, both sides pledge to “consult and strive to cooperate to the broadest possible degree”, inter alia, on “nuclear safety issues, across their full spectrum.” (NATO 1997) NATO’s 2000 CBM report is more specific and mentions the exchange of information “on safety provisions and safety features of nuclear weapons” as one issue to be considered for a dialogue between NATO and Russia on TNW. Five specific proposals were made:

- A. Lessons learned meetings by [nuclear weapon states] on safety and security
- B. Share personnel reliability program oversight practices
- C. Mutual observation of nuclear accident response exercises
- D. Joint NATO-Russia accident exercise
- E. Shadow exchange officer program (NATO 2000: 23-24)

More recently, the U.S. Senate, in its ratification of New START, urged the administration to engage Russia “with the objectives of ... establishing cooperative measures” to give both sides “improved confidence regarding the accurate accounting and security of tactical nuclear weapons.” (U.S. Senate 2010: paragraph 12(c)i)

The United States and Russia have already “pursued some extensive cooperation on technical and operational aspects of safety in their bilateral Nuclear Weapons Safety and Security Agreement (WSSX).” (Gottemoeller 2008: 123) Hans Binnendijk and Catherine Kelleher propose to model information exchanges on the safety and security of TNW on the U.S.-Russian information exchanges on strategic weapons after 2011. These could be complemented by officer exchanges, exercises to practice accident responses and cooperation on nuclear forensics. (Binnendijk/Kelleher 2011: 115)

Former U.S. Senator Sam Nunn has also recommended that NATO and Russia should “move without delay to adopt a series of steps that will improve the security of tactical nuclear weapons now, and pave the way for further consolidation, reduction and elimination of these weapons throughout the Euro-Atlantic zone.” (Nunn 2010) Specifically, Nunn proposed the following joint measures:

- “A threat assessment, focused on how terrorists might seek to penetrate sites where tactical nuclear weapons are located and gain access to a nuclear bomb;
- A security assessment, focused on identifying necessary improvements in site security in light of the terrorist threat;
- A recovery exercise, where NATO and Russian forces would work together to recover nuclear material stolen by a terrorist group;
- A site visit to a NATO and Russian base where tactical nuclear weapons are located to encourage improved security and build confidence;
- A commitment not to locate tactical nuclear weapons with operational units in the field; and
- A declaration of the total number of tactical nuclear weapons located in the Euro-Atlantic region.” (Nunn 2010)

The Euro-Atlantic Security Initiative has suggested the United States and Russia could build on their Cooperative Threat Reduction experiences. Through the NRC they could conduct “a joint threat assessment of the risk of terrorists or other non-state actors penetrating a storage site and gaining access to nuclear weapons; a joint security assessment of how site security might be improved to guard against such risks; and a recovery exercise in which U.S./NATO and Russian forces might work together to recover stolen nuclear weapons or fissile material.” The commission also proposed that the United States and Russia discuss standards for use-control features on non-strategic nuclear warheads. (EASI 2012: 6)

Publicly, Russia appears not to be interested in pursuing safety and security issues. Moscow argues that its TNW are secure because warheads and delivery systems are stored separately at central storage facilities. While this is debatable, a discussion on CBMs would not only have to focus on safety and security of Russian weapons. There have been safety<sup>4</sup> and security<sup>5</sup> issues with the U.S. B61 deployed in Europe. Thus, by broadening the concept of CBMs to include cooperative measures related to common risks such as nuclear safety/security, TNW postures would not only be framed as something dividing Russia and NATO but also as an area where both sides have common interests. The NRC defense group has also brought together nuclear experts who have discussed various ways to improve transparency, focusing on safety and security. These activities have apparently included demonstrations of safety and security precautions, and further activities are being discussed.<sup>6</sup>

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<sup>4</sup> For example, an Operational Safety Review in 1997 concluded that there were safety issues during maintenance and inspection of B61 deployed in Europe. (Kristensen 2005: 51-52)

<sup>5</sup> In 2010, anti-nuclear activists were able to breach the security parameter at Kleine Vogel airbase in Belgium, one of the suspected storage sites of B61 in Europe. (Kristensen 2012: 17-18; Robertus 2011)

<sup>6</sup> The authors are grateful to Simon Lunn for pointing out these activities.

## Conclusions

The existing literature on CBMs provides a rich menu of proposals and ideas. Many of the more recent proposals are revisions and new combinations of measures that have been put forward previously, rather than new concepts.

Discussions about transparency and confidence-building measures are currently taking place at a very low level because there is still a complete lack of transparency on TNW and very little confidence between the two sides. At the same time, the hurdles for implementation of even the most modest steps are sometimes presented as very high. Keeping in mind that “the perfect should not become the enemy of the good” it may be useful to consider implementation of modest steps – unilaterally, if reciprocity is not considered essential from a military perspective – to break the political impasse.

While cooperation on safety and security of TNW was seen as a way to build confidence between NATO and Russia at the end of the 1990s, these ideas do not seem to play a prominent role in current debates. This is surprising given the heightened attention given to the dangers of TNW falling into the hands of terrorists, the security lapses at NATO bases and the programs initiated by the United States to address security at TNW bases in Russia.

The discussion on CBMs and transparency measures is dominated by an analysis of interests of the possessor states Russia and the United States. There is not (yet) a specific European view on the problem, even though Europeans are most threatened by the continued deployment of these weapons. The reasons are the different perceptions within Europe on the future relationship between NATO and Russia. The agreement on the non-paper tabled by ten NATO states in April 2011 provides a useful starting point for a discussion of a European perspective on the issue.

The requirement for reciprocity is often based on political perspectives on the NATO-Russia relationship, rather than an analysis of security needs and necessities. For NATO, demanding reciprocity on TNW is a means of satisfying those member states that are skeptical of engaging Russia and want to use TNW as a bargaining chip in future talks on nuclear reductions. For Russia, the demand for NATO reciprocity is a means of asking for concessions from the United States and NATO on other security issues, including missile defense and conventional imbalances. For both sides, requesting reciprocity on an issue where the other side is inflexible can be a convenient way of avoiding difficult discussions on the purpose of TNW. (Seay 2011)

In addition, establishing reciprocity as a necessary precondition for changes in nuclear postures may be counterproductive: It conveys political value to TNW which, from a military perspective, these weapons no longer have. This is particularly true for NATO. For NATO, “making further cuts continued upon Russian reductions means handing over the initiative to Moscow. It implies that nothing will happen unless Russia agrees to cuts. Why would NATO want to tie its hands like that?” (Kristensen 2011: 2) On the other hand, Russia is cementing NATO unity by appearing inflexible in addressing concerns about the status of its vast arsenal of TNW. Both sides would be well-advised to consider breaking this deadlock through unilateral initiatives. Given the fact that TNW have little or no military value against today’s security threat, such measures would have little or no bearing on deterrence or defense capabilities. If CBMs can break the ice on the difficult issue of reducing TNW, they may help to improve overall political relations between Russia and NATO. The U.S. decision to cancel Phase IV of the European Phased Adaptive Approach was not taken with a view to breaking the political impasse with Moscow. Nevertheless, it is an indication that the United States (and NATO) are able to “unilaterally” forego military systems that are no longer viewed as necessary from a military point of view. The onus is now on Russia to reciprocate and thus pave the way for a substantive dialogue on a reduction of tactical nuclear weapons in Europe.

The advantage of confidence-building measures is that they can improve the chances for a substantive dialogue on nuclear reductions simultaneously by improving transparency and establishing a process that tackles many of the technical hurdles that will need to be overcome in the context of negotiations on a future accord to reduce and ultimately eliminate TNW. Without political backing, even such modest proposals to deal with this important part of the Cold War’s nuclear legacy will not be realized.





## Appendix

### A cursory overview of existing proposals on confidence-building and transparency measures<sup>1</sup>

Who	Year	What
Acton/Gerson	2011	<p>Steps to build confidence that warheads are not returned to active service:</p> <ul style="list-style-type: none"> <li>- store warheads awaiting dismantlement separately from active warheads/ designated storage areas</li> <li>- periodic declaration of number of warheads in dismantlement queue</li> <li>- periodic declaration of warheads destroyed</li> <li>- permit inspections to verify the above information</li> </ul> <p>Required inspections (proposal single limit on all warheads):</p> <ul style="list-style-type: none"> <li>- verification of the number of warheads on deployed and non-deployed delivery systems</li> <li>- verification of the number of warheads in storage</li> </ul> <p>Good starting point: develop protocols for verifying certain aspects of the PNIs</p>
Anthony/Janssen	2010	<ul style="list-style-type: none"> <li>- The transformation into a legal obligation of NATO's "three no's"</li> </ul>
Arbatov	2011	<ul style="list-style-type: none"> <li>- Joint threat assessment, including on regional and conventional imbalances and role of NSNW (for example through NRC)</li> <li>- Information exchanges on PNI implementation, including on dismantled warheads, component parts of dismantled warheads, location of retired warheads awaiting dismantlement</li> <li>- Mutual OSIs to substantiate data exchanges and confirm decommissioning of storage/deployment sites</li> <li>- Data exchanges on operational NSNW</li> <li>- Relocation of NSNW to the reserve, to be verified by random OSIs</li> </ul>
Diakov/Miasnikov/Kadyshv	2004	<ul style="list-style-type: none"> <li>- Negotiations to discuss the transformation of PNIs into negotiated agreements</li> <li>- "Transparency measures could be implemented in two phases. First, all U.S. and Russian NSNW arsenals could be divided into two categories. The first category could include those NSNW warheads which stay in storage but can be deployed in case of need. The second category could include warheads whose lifetime is over and which are programmed for elimination."</li> </ul> <p>First phase:</p> <ul style="list-style-type: none"> <li>- Declare numbers and storage sites of deployable warheads, pledge not to remove warheads from storage sites</li> <li>- Pledge not to reactivate retired warheads</li> </ul>

<sup>1</sup> This overview selectively highlights issues and proposals that, in our view, set these individual proposals apart from other existing proposals. We subjectively chose aspects that appear most interesting to us, but in no way attempted to summarize the ideas presented by individual authors or studies.

		<ul style="list-style-type: none"> <li>- Declare details of PNI implementation</li> <li>- Declare number of total warheads eliminated since 1992</li> <li>- Exchange information on nuclear planning</li> </ul> <p>Second phase</p> <ul style="list-style-type: none"> <li>- Visits to storage facilities to confirm warhead numbers</li> <li>- “Provide evidence” of warhead dismantlement</li> <li>- Visits to sites where warheads have been dismantled</li> </ul> <p>In parallel:</p> <ul style="list-style-type: none"> <li>- Joint development of means and procedures for warhead verification</li> <li>- Unilateral commitments by Russia and the United States not to carry out research on or development and production of new types of nuclear NSNW warheads.</li> </ul>
Diakov/Miasnikov/Kadyshev	2011	<p>Two phases of implementing transparency measures:</p> <p>First phase “Russia, USA and NATO could voluntarily:</p> <ul style="list-style-type: none"> <li>- share information about the total number of non-deployed nuclear weapons eliminated since 1992;</li> <li>- share information about the number of nuclear weapons associated with different types of delivery systems that were completely eliminated in accordance with the unilateral commitments in 1991 (e.g. land mines and artillery shells);</li> <li>- share information annually on the total number of nuclear weapons in the first category (active arsenal) and on the locations at which the weapons are stored, with each side undertaking commitments that weapons of this category will stay only in declared storage sites; and</li> <li>- declare that they have no plans to transfer weapons from the second (to-be-eliminated) category to the first category”</li> </ul> <p>Second phase: Confidential implementation of this exchange of information, in accordance with national legislation.</p>
Donilon	2011	<p>In advance of a new treaty limiting TNW, reciprocal step by step actions:</p> <ul style="list-style-type: none"> <li>- Increase transparency concerning numbers, locations, types of TNW</li> <li>- Consult with European allies, invite Russia to jointly develop this initiative</li> </ul> <p>“We are ready to begin discussions soon with Russia on transparency and confidence building measures that could provide the basis for creative verification measures in the next round of U.S.-Russia nuclear arms reductions.”</p>
Durkalec	2013	<p>Increasing mutual understanding on NATO-Russia nuclear postures:</p> <ul style="list-style-type: none"> <li>- “Creating common nuclear terminologies;</li> <li>- organizing seminars about nuclear doctrines;</li> <li>- exchanging information about a number or updated percentage of NSNWs dismantled as a result of PNIs”</li> </ul>

		<p>Facilitating future negotiations:</p> <ul style="list-style-type: none"> <li>- “Consultations aimed at identifying the most practical framework for future bilateral U.S.-Russia arms control negotiations [...]”;</li> <li>- defining exchanges of data indispensable for future U.S.-Russia negotiations [...];</li> <li>- consultations and joint work on possible verification mechanisms [...]”</li> </ul> <p>Initial focus on:</p> <ul style="list-style-type: none"> <li>- “Exchange of information about <i>types</i> of NSNWs, which may open the way for information-sharing about the modernization plans of non-strategic nuclear warheads and their delivery vehicles;</li> <li>- exchange of information about the <i>alert statuses</i> of nuclear forces;</li> <li>- <i>relocation</i> of some NSNW storage sites away from NATO-Russia borders;</li> <li>- <i>inspections and visits</i> to nuclear storage sites for inactive weapons.”</li> </ul>
Dvorkin	2013	<p>Limitation and reduction of Russian and U.S. TNW in a phased approach:</p> <ol style="list-style-type: none"> <li>1. Date exchange on TNW destroyed according to PSIs, including information about assignments and numbers of warheads</li> <li>2. “Introducing consultations and agreeing on unilateral initiatives with no verification procedures” Successive date exchange: “At the beginning, on the general number of TNW warheads, subsequently on the localizations of storage facilities, then on the number of warheads and their classification, and on the number of the warheads in the active reserve and these waiting to be utilized.”</li> <li>3. “Continuation of the consultations as well as execution of the agreed initiatives with partial verification” initial step: confirming that TNWs are in centralized storage facilities</li> </ol>
Gottmoeller	2008	<p>CBMs (first phase )</p> <ul style="list-style-type: none"> <li>- Cooperation on nuclear safety</li> <li>- Share research results, training measures to better handle fire &amp; lightning</li> <li>- Close-out activities at old bases</li> <li>- Meetings on decertification procedures, eventually reciprocal visits</li> <li>- Site visits to compare nuclear and non-nuclear bases</li> <li>- Build confidence that non-nuclear bases are “clean” and cannot hold nuclear weapons</li> <li>- Observation of personnel training, including certification activities</li> </ul> <p>Data exchange (second phase)</p> <ul style="list-style-type: none"> <li>- Declassification/unilateral declarations: e.g. on total holdings, deployed/dismantled warheads, etc.</li> <li>- Renew PNIs</li> <li>- Negotiate new data exchange agreement</li> </ul>
Gottwald	2010	<ul style="list-style-type: none"> <li>- Declaration of sole purpose doctrine</li> <li>- Dialogue on nuclear doctrines in NRC</li> </ul>
Kamp	2010	NATO should publish the number of U.S. nuclear weapons deployed in Europe:

		"In particular, the numbers of American and British submarine-launched nuclear missiles should be made public in order to convince those NATO members looking for nuclear reassurance that NATO has a credible, flexible and survivable nuclear posture beyond the heavily disputed B-61 arsenal."
Kelleher/Scott	2009	<ul style="list-style-type: none"> <li>- Expand and reform CFE verification to cover TNW</li> <li>- Establish baseline on TNW holdings</li> </ul>
Kolbin	2013	<p>United States/NATO could again confirm:</p> <ul style="list-style-type: none"> <li>- The "three no's" 1996 statement,</li> <li>- Principal readiness to withdraw the U.S. NSNW from Europe in the near future</li> </ul> <p>United States/NATO and Russia could</p> <ul style="list-style-type: none"> <li>- "Confirm the absence of any military role assigned to their NSNW arsenals deployed in Europe"</li> <li>- Exchange data on numbers, deployment status, place of deployment</li> <li>- Establish a joint NATO-Russia informal forum (instead of strictly official negotiations) within Russia-NATO Council frameworks: "elaborating a mandate for future talks on NSNW reductions"</li> </ul> <p>Within the frameworks of such an informal forum, standard preliminary questions could be addressed:</p> <ul style="list-style-type: none"> <li>- "Enhancing confidence regarding the declarations,</li> <li>- finding [...] ways to make monitoring and verification procedures more feasible [...],</li> <li>- discussing [...] new accounting rules and verification procedures,</li> <li>- better understanding the U.S./NATO and Russia's NSNW postures,</li> <li>- agreeing on concrete transparency measures regarding locations and operational status, exchanges of visits by military officials and clarification of the number of weapons that have already been eliminated by the U.S. and Russia as a result" of the PNIs</li> </ul>
Kristensen	2013	<ul style="list-style-type: none"> <li>- Focus on "areas where there is some compatibility between Russia and the United States", specifically air-delivered non-strategic nuclear weapons</li> </ul>
Lindvall et al.	2011	<ul style="list-style-type: none"> <li>- Partial withdrawal from a number of sites in a particular region, starting with a limited circle (1-2 sites, step by step expansion), then in Europe, then globally</li> <li>- Geographic starting point: south-eastern Baltic Sea</li> <li>- Format: bilateral U.S.-Russian negotiations, but European NATO members need to be involved</li> <li>- Verification mainly managed by national technical means, complemented by inspection mechanism</li> <li>- Continue to keep warheads dismantled from delivery vehicles, in central storage facilities/selected sites</li> <li>- Storage facilities might be kept operational under supervision for certain period</li> </ul>
Meier	2011	<ul style="list-style-type: none"> <li>- A moratorium on the deployment of modernized B61 nuclear bombs in Europe and the procurement of dual-capable aircraft by European allies</li> <li>- Should be reciprocated by Russia</li> </ul>
Miasnikov	2013	<ul style="list-style-type: none"> <li>- Divide non-deployed TNW in two categories – nuclear weapons assigned to deployed delivery systems and nuclear weapons with expired lifetimes, slated for disassembly and disposal</li> </ul>

		<p>First phase:</p> <ul style="list-style-type: none"> <li>- “Share information about the total number on non-strategic nuclear weapons eliminated since 1992,</li> <li>- Share information about the number of nuclear weapons associated with different types of delivery systems that were completely eliminated in accordance with” the PNIs</li> <li>- “Share information annually on the total number of nuclear weapons in the first category and [...] locations [...], sides should undertake commitments that weapons of this category will stay only in declared storage sites;</li> <li>- declare that they have no plans to transfer weapons from the second (to-be-eliminated) to the first category.”</li> <li>- Unilateral commitments by Russia and United States not to conduct research on or development and manufacture of new weapon types</li> </ul> <p>Second phase:</p> <ul style="list-style-type: none"> <li>- Exchange information on number of TNW associated with each type of delivery system;</li> <li>- “Permit visits to the facilities where weapons of the first category are stored”;</li> <li>- “Provide evidence of elimination of weapons of the second category;</li> <li>- permit visits to weapons storage facilities of the second category upon completion of weapons elimination procedures.”</li> </ul>
NATO CBM Report	2000	<p>NATO intends to pursue four specific confidence- and security-building measures with Russia to enhance mutual trust and to promote greater openness and transparency on nuclear weapons and safety issues:</p> <ol style="list-style-type: none"> <li>A. Enhance and deepen dialogue on matters related to nuclear forces,</li> <li>B. Exchange information regarding the readiness status of nuclear forces, <ul style="list-style-type: none"> <li>- A discussion of implementation of PNIs, steps taken by UK</li> <li>- Generic description of alert status</li> </ul> </li> <li>C. Exchange information on safety provisions and safety features of nuclear weapons, <ul style="list-style-type: none"> <li>- Lessons learned meetings by NWS on safety and security</li> <li>- Share personnel reliability program oversight practices</li> <li>- Mutual observation of nuclear accident response exercises</li> <li>- Joint NATO-Russia accident exercise</li> <li>- “Shadow” exchange officer program</li> </ul> </li> <li>D. Exchange data on U.S. and Russian sub-strategic nuclear forces.</li> </ol>
NATO Group of Experts	2010	<p>“NATO should invite an ongoing dialogue with Russia on nuclear perceptions, concepts, doctrines, and transparency, and should convene a Special Consultative Group in order to inform and coordinate its internal dialogue about nuclear-related issues.”</p> <p>“NATO should endorse a policy of not using or threatening to use nuclear weapons against non-nuclear states that are party to the Nuclear Non-Proliferation Treaty and in compliance with their nuclear non-proliferation obligations.”</p>

NATO Strategic Concept	2010	- Relocate Russian TNW away from the territory of NATO members
NATO-Russia Founding Act	1997	Consultations and cooperation on: - Reciprocal exchanges and, as appropriate, on nuclear weapons issues, including doctrines and strategy of NATO and Russia - Nuclear safety issues, across their full spectrum
Non-Paper by Poland, Norway, Germany, Netherlands, et al.	2011	1. NATO-Russia Council as the primary framework for transparency and confidence-building 2. Information exchange NATO-RUS: numbers, locations, operational status, command arrangements, level of warheads storage security – involve NRC Defense Transparency, Strategy and Reform Working Group 3. Agree on standard reporting formula for TNW inventories 4. Consider giving notification within NRC of any plans to move TNW 5. Consider exchange of visits by military officials 6. Exchanges on conditions and requirements for gradual reductions of TNW in Europe First phase: clarify number of weapons already eliminated or put in to storage as a result of PNIs 7. NRC seminar on nuclear doctrines, special emphasis on TNW, suggested host country Poland (first quarter 2012)
Pifer	2013	Transparency measures: - Data exchange on numbers, types, locations - Exchange of information regarding command arrangements, operational status, level of operational security CBMs: - Demating - “Centralized” Storage - Relocation/Consolidation of TNW away from NATO-Russia borders (especially storage sites near Estonia and Latvia (as well as any in Kaliningrad)), more difficult for storage facilities on Kola Peninsula; - Notification CBMs regarding relocation or consolidation - Inspections/visits to sites associated or formerly associated with TNWs
Pifer/O’Hanlon	2012	Three approaches: transparency and confidence-building measures, unilateral steps, and negotiated limits. - Transparency, codifying the separation of warheads from delivery systems (demating), relocation and consolidation of stored nuclear warheads, measures to enhance warhead security. - Transparency: provide information on numbers, types and locations - Codify separation of warheads and delivery systems - Relocation and consolidation of warheads - Unilateral steps: No-increase-commitment, unilateral reductions
Norway/Poland (April 2010)	2010	1. Transparency measures to be taken by U.S. & Russia - Reaffirm PNIs - Declare reductions of TNW since PNIs

		<ul style="list-style-type: none"> <li>- Declare TNW holdings (in NPT context or at United Nations General Assembly)</li> <li>- Declare intent to develop CBMs</li> </ul> <ol style="list-style-type: none"> <li>2. CBMs <ul style="list-style-type: none"> <li>- information exchange between the U.S. and Russia on the number, location and operational status of TNW warheads (in NRC) review of the role tactical nuclear weapons play in the military doctrines of NATO, Russia and the United States (in NRC or OSCE Forum for Security Cooperation)</li> </ul> </li> <li>3. Withdrawal to central storage places outside Europe (sic!), possible verification of withdrawal</li> </ol>
Pomper/Potter/Sokov	2009	<p>“Transparency package”</p> <ul style="list-style-type: none"> <li>- declaration of stockpiles</li> <li>- declaration of locations/storage facilities</li> <li>- limited reductions (as U.S. and Russia will likely continue unilateral limited reductions anyway)</li> <li>- full-scale legally binding and verifiable treaty</li> </ul> <p>Transparency measures to help lower the political profile of Russian TNW, reduce concerns among NATO countries about their possible military role:  “[...] absence of information about the number, types, and deployment pattern [...] promotes worse-case planning.”</p>
Pomper/Potter/Sokov	2010	<ul style="list-style-type: none"> <li>- Statement by United States (unilateral or on behalf of NATO), in conjunction with unilateral withdrawal of tactical nuclear weapons [from Europe] disclosing basic information about its stockpiles (including TNW on U.S. territory) and invite Russia to respond in kind</li> <li>- Include smaller arsenals of other nuclear-weapons states in the negotiation process in a limited and indirect way by means of a freeze on the number of nuclear weapons, both deployed and non-deployed; basic transparency measures with regard to the smaller arsenals; and limits on modernization</li> </ul>
Potter/Sokov	2004	<ol style="list-style-type: none"> <li>1. Reaffirm PNIs</li> <li>2. Complete implementation of PNIs and provision of detailed information on implementation (including assistance)</li> <li>3. Greater transparency</li> <li>4. Enhance security of TNW (including assistance)</li> <li>5. Reduce alert level <ol style="list-style-type: none"> <li>a. Extending the time to mate warheads with delivery vehicles</li> <li>b. Advance notifications of warhead movements to bases/delivery vehicles (possible aided by sensors)</li> </ol> </li> <li>6. Codify (possibly: revise) PNIs</li> <li>7. Global ban on TNW (in specific categories)</li> </ol>
Lavrov	2011	<ul style="list-style-type: none"> <li>- Withdrawal of TNW to national territory of possessor state</li> <li>- Dismantlement of nuclear infrastructure in third countries</li> </ul>



		- (Extend INF to cover TNW)
Zagorski	2011	<ul style="list-style-type: none"> <li>- Disclose the number of deployable TNW and strategic weapons in their reserves and exchange information on the number of TNW destroyed on the basis of the PNIs as well as of all nuclear weapons destroyed over the past twenty years</li> <li>- Resume data exchanges on the implementation of the PNIs</li> <li>- NATO-Russia Council as the platform for multilateral consultations on TNW for confidential data exchange; discussion of nuclear postures; updating Russia on the intra-NATO consultations concerning the future of the U.S. nuclear assets in Europe</li> <li>- Consolidating TNW in central storage facilities.</li> </ul>

## *List of Acronyms*

CBM	Confidence-Building Measure
DDPR	Deterrence and Defense Posture Review
EASI	Euro-Atlantic Security Initiative
INF	Intermediate-range Nuclear Forces
NATO	North Atlantic Treaty Organization
New START	Treaty between the United States of America and the Russian Federation on Measures for the Further Reduction and Limitation of Strategic Offensive Arms
NPT	Nuclear Non-Proliferation Treaty
NRC	NATO-Russia Council
NSNW	Non-strategic Nuclear Weapon
OSI	On-site inspection
P5	Permanent members of the United Nations Security Council
PNI	Presidential Nuclear Initiative
TNW	Tactical Nuclear Weapon

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