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REPORT

THE POLISH INSTITUTE OF INTERNATIONAL AFFAIRS

PISM–IMEMO RAN WORKSHOP REPORT

OPTIONS FOR TRANSPARENCY AND CONFIDENCE-BUILDING MEASURES RELATED TO NON-STRATEGIC NUCLEAR WEAPONS IN EUROPE:

COST-BENEFIT MATRIX

WARSAW
JULY 2014

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Options for Transparency and Confidence-Building Measures Related to Non-Strategic Nuclear Weapons in Europe: Cost-Benefit Matrix

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Introduction

On 20–21 February 2014 in Warsaw, the Polish Institute of International Affairs (PISM) in cooperation with the Institute of World Economy and International Relations of the Russian Academy of Sciences (IMEMO RAN) organised the workshop: *Transparency and Confidence-Building Measures Related to Non-Strategic Nuclear Weapons in Europe: Cost-Benefit Matrix*.

The workshop sought to advance the informal dialogue on information-sharing and transparency and confidence-building measures (TCBMs) regarding non-strategic nuclear weapons (NSNW) in Europe. The idea behind the workshop was based on the concept of a Joint TCBM Cost-Benefit Matrix, outlined in the final report of the 2013 *Warsaw Workshop: Prospects for Information-Sharing and Confidence-Building on Non-Strategic Nuclear Weapons in Europe*.

Specific options for adopting transparency and confidence-building measures were analysed by 22 experts from NATO countries and Russia. The objective was to assess what NATO member states and Russia could gain from applying such measures and what costs could be attached to their introduction. This exercise aimed at better understanding existing differences, identifying areas of potential agreement as well as obstacles, and developing relevant policy recommendations.

The workshop did not intend to produce consensus among experts on the rationality and terms of applying specific measures. It rather sought to brainstorm, in a systematic manner, the benefits and eventual costs of applying different sets of TCBMs in the context of NATO–Russia and/or U.S.–Russia relations. This report summarises different, often divergent arguments raised in discussions during the workshop. It reflects only the authors' assessment of the workshop proceedings, and any shortcomings or omissions are their sole responsibility.[1]

[1] The authors would like to thank all participants, especially Łukasz Kulesa, for their invaluable input to the workshop and this report.

Executive Summary

– Deterioration of Russian–Western relations against the background of the ongoing crisis in and around Ukraine makes any progress on information-sharing and transparency and confidence-building measures (TCBMs) regarding non-strategic nuclear weapons (NSNW) in Europe virtually impossible in the foreseeable future. This, however, does not change the rationale of the workshop: to explore the merits, feasibility and mutual benefits of TCBMs. At some point in the future, the political window of opportunity for a breakthrough might open. To fully take advantage of it, there is a need to have in place a list of available TCBM options that might be implemented by both sides.

– The workshop identified three types of NSNW TCBM options that might form a path for gradual progress:
"Low-hanging fruit": options that seem to be relatively easy to accept by both NATO and Russia (seminars on nuclear doctrines and joint accident/incident response exercises)
"Challenging": options that would require strong political will on both sides. These options would inflict some political and security costs, and their value in terms of confidence-building may be questionable, at least to one side—in the majority of cases, to Russia (options including information exchanges on numbers of historical and current stockpiled weapons, collaboration on development of *verification* techniques, reaffirmation of previous or new restraint pledges)
"Dead-ends": options that seem unrealistic for the foreseeable future for both NATO and Russia, as they could pose significant political, strategic, military/operational and/or practical implementation challenges (such as information exchanges about former or current NSNW storage facilities, removal of NSNW from NATO–Russia borders).

– Only a comprehensive and detailed examination of each option that takes into account the various criteria can provide a better understanding of the underlying interests and considerations behind NATO's and Russia's stances on TCBMs. **An assessment of the value of the various options from the NATO and Russia perspectives are in many aspects strikingly divergent**. What NATO members perceive as beneficial from an inclusive political, security, confidence-building and arms-control perspective, Russia sees as challenging, and vice versa. A shared view on what constitutes a symmetrical, reciprocal step, one that holds comparable costs for both sides, would also be difficult to achieve.

– The main obstacle to any progress on NSNW TCBMs is the political. **New political impulses from the highest political levels could provide a way out of the deadlock.** With enough political will, both sides can skilfully craft measures that would strengthen their security and incur benefits that would outweigh possible costs. After the crisis in Ukraine is over, even a dialogue on NSNW TCBMs could be used to limit damage to the NATO–Russia relationship.

Part 1: Main Findings and Recommendations

1.1. Political And Strategic Background

Despite a flurry of proposals regarding possible TCBMs related specifically to U.S./NATO and Russian NSNWs, there is little chance for progress, as the positions of all sides remain poles apart.

From the NATO perspective, after a period of internal discussion accompanying work on the 2010 Strategic Concept and 2012 Deterrence and Defence Posture Review (DDPR), consensus was reached to engage Russia on the TCBM issue.[2] The Alliance's decision was motivated by several considerations. First of all, work on TCBMs became a common platform bringing together NATO members with different perspectives on the role of nuclear weapons, particularly of U.S. NSNW based in Europe. It provided a common way forward for countries calling for further and bold reductions or even complete withdrawal of U.S. weapons from Europe and those that favoured the maintenance of the status quo.

Secondly, work on TCBMs is perceived as an element of preparing for an eventual U.S.–Russia arms control process encompassing NSNWs. Confidence-building measures are seen as useful in terms of exploring definitional difficulties related to those weapons, and legal and practical challenges of verification of existing arsenals of non-deployed but operatively deployable warheads kept in storage.

Last but not least, work on transparency and confidence-building is also seen as a tool for alleviating uncertainties and concerns related to some elements of the Russian nuclear posture, including its doctrine of nuclear de-escalation, size, and location of Russia's NSNW arsenal. From a broader perspective, it is also seen as a means of creating additional space for political and military cooperation, including expanding interactions between NATO and Russian officials and military.

As tasked by the DDPR, NATO has been working on developing possible TCBM options. After reviewing a number of proposals, NATO's Arms Control, Disarmament and Non-Proliferation Committee has reportedly selected two TCBM proposals for possible discussion with Russia: organisation of NATO–Russia briefings or seminars on nuclear doctrines and coordinating unilateral or multilateral statements on nuclear policy.[3] These relatively modest options demonstrate that even despite NATO's declaratory openness, any progress will not be easy.

Russia's perspective on any arms control and/or confidence-building measures related to NSNWs is very different from that of the NATO states.[4] Moscow does not see any reason to consider NSNW-related arms-control measures separately or to single out this particular category of weapons as long as its own concerns, such as the U.S. ballistic missile defence deployments in

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[2] "Active Engagement, Modern Defence: Strategic Concept for the Defence and Security of the Members of the North Atlantic Treaty Organisation Adopted by Heads of State and Government at the NATO Summit in Lisbon 19–20 November 2010," www.nato.int/strategic-concept/pdf/Strat_Concept_web_en.pdf; "Deterrence and Defence Posture Review," Press Release (2012) 063, issued on 20 May 2012, www.nato.int/cps/en/natolive/official_texts_87597.htm?mode=pressrelease.

[3] O. Meier, S. Lunn, "Trapped: NATO, Russia, and the Problem of Tactical Nuclear Weapons," *Arms Control Today*, January/February 2014, https://www.armscontrol.org/act/2014_01-02/Trapped-NATO-Russia-and-the-Problem-of-Tactical-Nuclear-Weapons.

[4] See more: A. Zagorski, *Russia's Tactical Nuclear Weapons: Posture, Politics and Arms Control*, Hamburger Beiträge zur Friedensforschung und Sicherheitspolitik, Heft 156, IFSH, Hamburg, 2011; "The Future of Non-strategic Nuclear Weapons in Europe: Options Available," *Security Index: A Russian Journal on International Security*, vol. 19, no. 2, 2013.

Europe or the development of long-range conventional precision-guided munitions, are not addressed appropriately. Also, for Russia, any talks on NSNW are conditional upon the withdrawal of all U.S. nuclear weapons from Europe to U.S. territory.

Unlike NATO, which has analysed different types of measures, specific NSNW TCBM options have seemingly not been a subject of practical considerations in policymaking cycles in Russia. Moscow's policy seems to be that until official talks begin, there is no point in discussing with NATO or making in-depth analysis of specific measures. In the longer term, NSNW TCBMs may be seen as part of an eventual broad accord with NATO, but not a partial solution preceding it. The growing tensions and mistrust between Russia and the West further diminishes the probability of changing this attitude.

While chances for advancing TCBMs related to NSNW are considered low due to the divergent approaches of the NATO member states and Russia, the continued deterioration of Russia–Western relations against the background of the ongoing crisis in and around Ukraine complicates the picture further. NATO–Russia relations have entered a period of turmoil in which both sides are focused more on sending signals of military strength rather than on transparency and confidence-building, with political-level dialogue and practical cooperation limited to a minimum.

This does not diminish, however, the rationale of the workshop' objective to explore the merits, feasibility and mutual benefits of TCBMs related to NSNW, setting the stage for a moment when the issue is back on the agenda and the political window of opportunity opens again.

1.2. Findings

The workshop demonstrated the need for a multidimensional analysis of each NSNW TCBM. Only a comprehensive and detailed examination of each option that takes into account the various criteria may provide a better understanding of the underlying interests and considerations behind NATO's and Russia's stances on the various TCBMs.

There are no "cost-free" NSNW TCBMs. Each TCBM would impose some costs, at least on one side—NATO or Russia. The majority of options examined at the workshop would, however, most likely be perceived by Russia as disproportionately more costly in comparison to NATO. Without a change in Russia's perception or a willingness by NATO to put additional concessions on the negotiations table, any progress on NSNW TCBMs seems unlikely.

The workshop **did not identify any "breakthrough" TCBMs**—options that would be relatively easy to agree on, but at the same time have significant added value to mutual transparency and confidence-building.

The workshop identified only **two "low-hanging fruit" TCBMs**—options that seem relatively acceptable to both NATO and Russia. These include regular seminars on nuclear doctrines and joint nuclear accident/incident response tabletop and "live" exercises. These measures, however, have limited impact on confidence-building, except for maintaining dialogue. NATO and Russia have a track record of having occasionally practiced such measures in the past.

Five options were identified as **"challenging TCBMs"**:

- Collaboration on the development of verification techniques, including resumption of joint work on non-intrusive verification measures
- Information exchanges about historical and current numbers
- NATO reaffirmation of the nuclear "Three No's" pledge

– U.S. and Russian statements reaffirming their commitment to the 1991/1992 Presidential Nuclear Initiatives

– Pledges of transparent modernisation of NSNW

Agreement on these options could have an important confidence-building effect, at least for one side, and could be useful in any future arms-control talks. However, for Russia especially, such an agreement would inflict political and security costs while not being perceived as providing added value in terms of confidence-building. For both NATO and Russia, agreement on most of these options would require a painstaking declassification effort. Still, in a more favourable political climate, such options would be worth exploring first.

The reaffirmation of the "Three No's" by NATO was the only option considered during the workshop that could be more costly to the Alliance than to Russia. Such a reaffirmation would, in the opinion of the workshop's participants, require a reciprocal step from Russia. One option might be Russia's reciprocal reaffirmation of the 1991/1992 PNIs, including Russia's declaration that it has already eliminated or will eliminate and will not develop nuclear warheads for its ballistic and cruise missiles and artillery. At the current stage, such reciprocal steps, even though only reaffirmations of past commitments, seem unlikely.

It is unclear whether reaffirmation of the PNIs would be perceived by Russia as a challenging option or as a non-starter. A lot would depend on the role of short-range missiles in Russia's nuclear doctrine and potential alternatives to replace it. With Russia's continued ambiguity on the PNIs, attempts to agree on reciprocal pledges of transparent modernisation would be unlikely to succeed.

Five TCBM options should be classified as **"dead-ends"**:

– Information exchanges about former (deactivated) NSNW storage facilities

– Notifications about movements of NSNW

– Removal of NSNW from NATO–Russia borders

– Exchange of military officers

– Pledges not to modernise existing nuclear warheads and make new delivery vehicles nuclear-capable (replacement of existing delivery vehicles with new platforms adapted/certified for nuclear missions)

In the foreseeable future, these options seem unrealistic as for both NATO and Russia they could pose significant political, strategic, military/operational and/or practical implementation challenges. Even NATO, which has been willing to work on NSNW TCBMs, would most likely not find a consensus to propose such options to Russia.

Measures that can be seen as easy at first sight may not necessarily be seen in the same light if analysed more deeply. Information about inactive storage sites, for example, was proposed by many experts as one of the first options that should be considered. Surprisingly, however, even if NATO would be persuaded to pursue it, the workshop showed that Russia would not be interested.

It seems clear, that **without some new political momentum, any progress on NSNW TCBMs will be unlikely.** It can only start if impulses came from the highest political levels. If both sides would not see clear political gains on engaging on NSNW TCBMs, the security factor, military/operational and practical considerations would dominate the thinking and block any progress.

Without a shared perception that NSNW TCBMs increase rather than decrease security, any progress would be difficult to achieve. For the majority of options, there is a clear contrast between the approach of the NATO and Russian experts regarding the options' impact on NA-

TO's and Russia's perceptions of security and confidence-building. If based on reciprocity, NATO members would generally perceive NSNW TCBMs as strengthening their security and building confidence. For Russia, however, the majority of options would have a detrimental security impact and very modest or no contribution to mutual confidence. There is a clear need to work on different options that would not be seen as harming the deterrence and assurance value of nuclear weapons on both sides.

When looking at the operational/military dimension and practical challenges, the NATO and Russian perspectives seem in many cases alike. There are many options that may be seen by both sides as having a neutral impact on handling of arsenals and posing medium-level practical challenges (related mostly to practical problems with declassification of sensitive information). "Dead-end" options that could significantly complicate handling of the Russian arsenal and would be extremely costly to implement by Russia, could be perceived in a similar way by NATO. **The higher operational and practical implementation costs of a particular option, the less likely is it that it would ever be considered.**

The lack of shared views on reciprocity would be another factor blocking any progress on NSNW TCBMs. While most NSNW TCBMs would be seen by NATO as symmetrical (i.e., requiring the same or similar actions by both sides), Russia could be more interested in package deals, addressing Russia's concerns in other fields such as ballistic missile defence, in which various actions are grouped together as an equivalent step.

The higher level of confidentiality, including limiting the number of states with access to specific information**, the higher the probability of reaching agreement on specific TCBMs.** Russia would be more reluctant to share sensitive information with European NATO members than with the U.S. Also, Russia might be unwilling to allow the U.S. to share some sensitive data received through bilateral channels with its NATO allies. If this would be the case, the wider effects of bilateral U.S.–Russia confidence-building agreements would be limited for majority of NATO allies (for example, if the U.S. and Russia ever agree on information exchanges about numbers of non-strategic nuclear weapons).

Almost all of the analysed TCBMs would be consistent with NATO's current arms control policy; in contrast, only some options may be seen by Russia in a neutral light, meaning that agreeing to them would not necessarily imply a readiness to go further and would not decrease Russia's bargaining position in other fields (missile defence, conventional arms control). Absent a change in the Russian negative stance to arms control, **the more politically or technically useful a particular option is to prepare the groundwork for an arms control agreement, the less likely it is to be accepted by Russia.**

The workshop revealed that the NATO–Russia framework most likely would have very limited capacity to contribute to developing and implementing relevant TCBM measures, except for ones that are the most modest. For the majority of the "challenging" options, a U.S.–Russia bilateral channel is more likely to produce results. Because of the Russian preference to limit external access to its nuclear data, Russia may be unwilling to pursue anything more than very modest TCBMs through NRC.

Geographic area of application may vary depending on particular NSNW TCBM. Still, the workshop revealed that an agreement on measures confined only to NATO Europe and the European part of Russia is highly unlikely. The majority of the measures analyzed during the workshop would apply to NSNW located on the whole territory of NATO (including the U.S.) and on the whole of Russian territory. **Focusing solely on Europe-specific options does not seem to be a promising way forward**.

When analysing particular NSNW TCBM options, it is necessary to look at **possible links among different measures**. First, some NSNW TCBMs are practically inseparable. For example,

it seems that the U.S. and Russia cannot provide information about warheads dismantled since the 1991/1992 PNIs without indirectly providing information about the current numbers. Second, sequencing or parallel implementation of some TCBMs may be necessary. For example, Russian agreement on a reciprocal "transparent modernisation" pledge with NATO would not be possible without offering transparency as to the types of nuclear delivery vehicles it possesses now.

The workshop neither examined all possible NSNW TCBM options nor was able to explore all arguments for assessing each particular option. Further work on NSNW TCBMs is required. For this purpose, **the workshop was aimed to offer a useful blueprint to systematically examine different options through various criteria.**

1.3. Policy Recommendations

- Transparency, confidence-building and arms-control measures should not be treated as a byproduct of attempts to build a partnership between NATO and Russia, as in past years. The current freeze in the mutual relationship resulting from the crisis in and around Ukraine only reaffirms the need to build stability, predictability and confidence in the military sphere in the Euro-Atlantic area.
- Until the current crisis in Ukraine is successfully overcome, any proposals related to NSNW TCBMs would most likely be unsuccessful. Also, even very modest proposals do not have a chance to succeed as long as the work of the NATO–Russia Council is limited to ambassadorial-level meetings and as long as cooperation between NATO, the U.S. and Russia is suspended.[5] Still, there is a need for work on different TCBM options so that practical and reasonable measures would be in place when the political momentum rises. Track 1.5 discussions offer a platform for moving work on NSNW TCBMs further, even during unfavourable political conditions.
- The main obstacle to any progress on NSNW TCBMs is political. With political will, both sides can skilfully craft measures that would not weaken their security, and in which benefits would outweigh possible costs. A political message of a willingness to seriously engage on talks on NSNW TCBMs would itself constitute a valuable TCBM. Just talking would not inhibit NATO nor Russia's security and would not limit their political options. If NATO and Russia have discussed missile defence, a divisive issue, why could they not discuss NSNW TCBMs?
- An incremental, gradual approach to NSNW TCBMs offers the most practical way forward. While thinking "big," any efforts by NATO and Russia should focus on small steps. A good way to start is to re-establish and possibly strengthen TCBMs that were implemented in the past by making them regular, particularly seminars on nuclear doctrine and joint nuclear accident/incident response exercises.
- Any proposals for NSNW TCBMs should take into account the possible perception of the other side. There is no point in investing political capital in measures the other side would see as a canny attempt to weaken its own security. What seems easy for NATO, would most likely not be perceived in such a way by Russia. To avoid a possible misunderstanding or suspicion, and instead of exchanging proposals and counter-proposals, NATO and Russia could engage in dialogue (formal or informal) aimed at establishing a list of TCBMs that might be of interest to both sides.

[5] On 1 April 2014, as a response to Russian actions in Ukraine, NATO members limited the NATO–Russia Council Dialogue to the ambassadorial level and above and suspended practical and military cooperation with Russia. "Measures following the NATO ministers' decision to suspend all practical cooperation with Russia," 7 April 2014, www.nato.int/cps/en/natolive/news_108902.htm.

– A cost-benefit matrix could be used as a blueprint for similar workshops aimed at advancing an informal dialogue on information-sharing, and transparency and confidence-building measures regarding non-strategic nuclear weapons. In the future, it might be applied to the NATO–Russia formal dialogue aimed at exploring the feasibility of particular options.

Part 2: Proceedings of the Workshop

2.1. Workshop Concept

The concept of the workshop was based on a proposal for developing a Joint TCBM Cost--Benefit Matrix outlined in the final report of the 2013 *Warsaw Workshop*: *Prospects for Information-Sharing and Confidence-Building on Non-Strategic Nuclear Weapons in Europe*.[6]

A group of 22 experts from NATO member states and Russia were invited to discuss, in a systematic manner, specific TCBMs against several criteria. The matrix developed for this exercise was designed to reflect experts' assessments of what NATO member states and Russia could gain from applying specific measures and what obstacles could impede their introduction. The goal was to understand differences in views, identify areas of potential agreement, and develop policy recommendations.

The workshop consisted of two parts. The first part aimed at discussing the list of specific TCBMs to be analysed during the workshop and criteria for their assessment. Based on two short scoping papers distributed prior to the workshop, discussion focused on clarifying, modifying, or providing additional ideas about different options and criteria. In the second phase, each TCBM was assessed individually based on the set of those criteria.

The workshop was not expected to produce consensus among experts on the rationality and terms of applying specific measures. It rather sought to brainstorm the merits of applying different sets of TCBMs in the context of NATO–Russia and/or U.S.–Russian relations.

Definitional Issues

Any discussion on non-strategic nuclear weapons cannot escape problems with defining these weapons. As a point of departure to further discussion during the workshop, a definition by exclusion was chosen, according to which non-strategic nuclear weapons are defined as "weapons systems (warheads and associated delivery vehicles) that are not covered by existing nuclear arms control treaties (New START and INF)."[7] If not specified otherwise, the term non-strategic nuclear weapons in the report refers to this particular definition.

Still, discussion related to specific options demonstrated a need for definitional flexibility and for adapting understanding of non-strategic nuclear weapons to concrete TCBM options. In case of some TCBM measures, NATO and Russia can use the definition above (by exclusion), as they do not have to be precise about specific weapons systems they have in mind. If needed, they could narrow the scope of the definition by excluding particular systems (for example, Russian nuclear-tipped air and missile defence systems) or they could simply enumerate concrete types of NSNW.

The question whether delivery vehicles should be included or not remains controversial. On the one hand, most scholars of the issue concentrate on warheads only and do not include

[6] P. Schulte, P.S. Hilde, K. Zysk, Ł. Kulesa, J. Durkalec, *The Warsaw Workshop: Prospects for Information-Sharing and Confidence-Building on Non-Strategic Nuclear Weapons in Europe*, Post-Conference Report, Polish Institute of International Affairs, the Nuclear Policy Program of the Carnegie Endowment for International Peace, and the Norwegian Institute for Defence Studies, Warsaw, April 2013, p. 19. In this regard, the organisers would like to highlight the input of Dr. Bruno Tertrais, Senior Research Fellow at Fondation pour la Recherche Stratégique.

[7] *Ibidem*, p. 10.

delivery systems into consideration as they are primarily designed for conventional munitions.[8] Also, nuclear warheads, as pledged by the U.S. and Russia, are not operationally deployed on the relevant delivery vehicles but are kept separately in special storage facilities. Therefore, for some TCBM options, inclusion of delivery vehicles seems neither necessary nor practically helpful and it is better to focus solely on nuclear warheads. On the other hand, measures focused on delivery vehicles could provide some additional confidence-building options, for example, transparency on dual-capable systems or relocations of nuclear delivery vehicles away from nuclear storage areas.

For the purpose of the workshop, transparency measures were understood as steps that promote "better communication and understanding among the parties," while confidence-building measures are steps that "impose some military constraints on parties." The general goals of pursuing (T)CBMs include: reassuring states of the non-aggressive intentions of their potential adversaries and reducing the possibility of misrepresentation of certain activities; narrowing the scope of political intimidation by the forces of the stronger power; and minimising the likelihood of inadvertent escalation of hostile acts in a crisis situation.[9] This definition of confidence-building measures, however, was not uncontroversial among workshop participants either, as some participants argued that it confuses confidence-building with proper arms control.

Options Considered

As for the list of specific eventual NSNW-related TCBMs, the workshop built upon the extensive lists of such measures suggested in a number of recent publications and working papers.[10] These lists were narrowed to different types of TCBMs proposed by non-governmental experts, and options that were considered by relevant NATO bodies (including options listed in the non-paper signed by 10 NATO members in April 2011[11]). The discussion during the workshop concentrated primarily on the following 13 options:

Greater Communication

1. Regular NATO–Russia Joint Seminars on nuclear doctrines, including policies for use of NSNW.

Declarations and Pledges

2. U.S. and Russian statements reaffirming their commitment to the Presidential Nuclear Initiatives (PNIs)—pledges of unilateral parallel reductions, elimination or consolidation of different categories of non-strategic nuclear weapons announced by U.S. President George H.W. Bush

[8] For a discussion of the issue, see, inter alia, G. Arbman, C. Thornton, *Russia's Tactical Nuclear Weapons. Part I: Background and Policy Issues*, Swedish Defence Research Agency, Stockholm, 2003, pp. 9–11; A. Diakov, E. Myasnikov, T. Kadyshev, *Non-strategic Nuclear Weapons: Problems of Control and Reduction*, Center for Arms Control, Energy and Environmental Studies of the Moscow Institute of Physics and Technology, Dolgoprudny, 2004, pp. 7–10; M.A. Pomper, W. Potter, N. Sokov, *Reducing and Regulating Tactical (Nonstrategic) Nuclear Weapons in Europe*, The James Martin Center for Non-proliferation Studies, Monterey, 2009, p. 9; A. Arbatov, "Non-Strategic Nuclear Weapons," in: *NATO–Russia Relations (Prospects for New Security Architecture, Nuclear Reductions, CFE Treaty)*, IMEMO RAN, Moscow, 2010, p. 29; A. Zagorski, *op. cit.*, p. 9.

[9] Based on: J. Goldblat, *Arms Control: The New Guide to Negotiations and Agreements*, 2nd ed., London, 2003 (cited in A. Finger, O. Meier, *Confidence-building on Tactical Nuclear Weapons: What's on the Table?*).

[10] P. Schulte, P.S. Hilde, K. Zysk, Ł. Kulesa, J. Durkalec, *op. cit.*; O. Meier, A. Finger, *Confidence-building on Tactical Nuclear Weapons: What's on the Table?*, Hamburger Beiträge zur Friedensforschung und Sicherheitspolitik, Heft 160, Hamburg, Mai 2013; O. Meier, S. Lunn, *op. cit.*

[11] "Non-paper Submitted by Poland, Norway, Germany and the Netherlands on increasing transparency and confidence with regard to tactical nuclear weapons in Europe," 14 April 2011, www.fas.org/programs/ssp/nukes/nuclearweapons/nato-nonpaper041411.pdf.

on 27 September 1991 and 28 January 1992, and reciprocal pledges by Soviet President Mikhail Gorbachev on 5 October 1991 and Russian President Boris Yeltsin on 29 January 1992.

3. NATO's reaffirmation of the nuclear "Three No's" declaration from the 1997 NATO–Russia Founding Act that NATO members "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."[12]

4. Pledges on transparent modernisation of NSNW, including information on new nuclear warheads and delivery vehicles.

5. Pledges not to modernise existing nuclear warheads or make new delivery vehicles nuclear-capable (replacement of existing delivery vehicles with new platforms adapted/certified for nuclear missions).

Information Exchanges

6. Information exchanges about historical data: numbers of NSNWs that have been dismantled since the PNIs, including the total number of disposed warheads.

7. Information exchanges about the current numbers of U.S. and Russian NSNWs, including "deployable" warheads with various reserve statuses and warheads "awaiting dismantlement."

8. Information exchanges about former (deactivated) NSNW storage facilities.

Notifications

9. Notifications about movements of NSNW.

Collaborative Projects

10. Collaboration on development of verification techniques, including resumption of joint work on non-intrusive verification measures, for example, continuation of lab-to-lab exchanges or use of the UK–Norway initiative framework.

11. Joint nuclear accident/incident response tabletop and "live" exercises. Four such "live" exercises have already taken place within the NATO–Russia Council framework.

12. Exchanges of military officers.

Re-basing

13. Removal of NSNW from NATO–Russia borders.

The original list of options to be considered during the workshop included information exchanges about active storage facilities and visits to inactive and active storage sites. However, as information exchanges about inactive storage facilities occurred to be out of reach for the foreseeable future, these far-reaching options were taken off the table.

[12] "Founding Act on Mutual Relations, Cooperation and Security between NATO and the Russian Federation," signed in Paris, France, 27 May 1997, www.nato.int/cps/en/natolive/official_texts_25468.htm.

Criteria of Analysis

The workshop participants were asked to provide a general assessment of each of the TCBMs above through the prism of 10 specific criteria. For this purpose, they were provided with three options from which to choose.

The first three criteria play a role as an "initial checklist":

Format

A. Bilateral U.S.–Russia

B. NATO–Russia (NATO–Russia Council)

C. Other formats (including P5)

Geographical Coverage

A. NATO Europe and European part of Russia

B. NATO and Russia (whole territory, including the U.S. and Russia east of the Urals)

C. Other, e.g., limited area within NATO and Russia or global coverage

The Level of Classification

A. Confidential

B. Public

C. Other

The next set of criteria included key political, security, military/operational and practical considerations related to NATO's and Russia's nuclear postures.

Political Dimension

Issues for consideration:

- Relationship with previously announced political conditions related to talks on NSNW—does it require major/minor modifications of current policy?
- Perception of domestic audiences (parliaments, public opinion, strategic community, defence establishment, and nuclear industry);
- Political signal to the outside world (potential to be viewed as a contribution to commitments under the NPT; reactions of neighbouring countries and other partners).

Overall assessment:

A. RISKY (COSTLY, e.g., requiring a change in previous policy)

B. NEUTRAL

C. ADVANTAGEOUS (e.g., in line with policy or specific proposals already formulated)

Impact on Security Perceptions

Issues for consideration:

- Influence on the credibility of deterrence, including impact on survivability of nuclear forces;

– Influence on reassurance (NATO context);
– Implications for the possible deterrence relationship with third parties (e.g., Russia–China; NATO–Iran/Syria; U.S.–China/North Korea).

Overall assessment:

A. WEAKENING PERCEPTION OF SECURITY

B. NEUTRAL

C. STRENGTHENING PERCEPTION OF SECURITY

Military/Operational Dimension

Issues for consideration:

– Impact on peace-time nuclear training and functioning of nuclear forces;
– Implications for safety and security of existing NSNW arsenals;

Overall assessment:

A. COMPLICATES HANDLING OF THE ARSENAL

B. NEUTRAL

C. MAKES EASIER HANDLING OF THE ARSENAL

Practical Implementation Challenges

Issues for consideration:

– Time needed for implementation and sustainability (one-time event or regular/long-term arrangement);
– Money aspects: costs, potential savings;
– Challenges related to declassification of sensitive information;
– Additional effort needed by the administration, military, other agencies.

Overall assessment:

A. DIFFICULT

B. MEDIUM

C. EASY

The last set of criteria focused on the effects of different options, including an impact on confidence-building, arms control and perception of reciprocity.

Contribution to Building Mutual Confidence and Predictability

Issues for consideration:

- What is the added value of a particular measure for increasing confidence (does it address important concerns by Russia and/or NATO)?
- Does this particular TCBM decrease the risk of misperceptions and wrong assumptions about the other side's nuclear posture and the intentions behind it?
- Potential to establish patterns of personal interaction and lasting networks;
- Is this particular measure verifiable? Is a verification mechanism necessary?

Overall assessment:

A. SIGNICIFANT

B. MODEST

C. NO CONTRIBUTION

Implications for Arms-Control Policy

Issues for consideration:

- To what extent will a particular option build political momentum for further reductions of NSNW in Europe (unilateral or reciprocal)?
- To what extent will a measure technically prepare the groundwork for future arms-control measures involving NSNW in Europe?
- How does a particular measure relate to NATO's and Russia's arms-control policies? For example, could agreeing on this measure impact the bargaining position of NATO and Russia in other areas (missile defence talks, conventional arms control)?

Overall assessment:

A. CONDUCIVE

B. NEUTRAL

C. DETRIMENTAL

Reciprocity

Issues for consideration:

- Can "simple," direct (symmetric) reciprocity be applied?
- If not, could the option be modified to create cross-cutting reciprocity for both NATO members and Russia?

Overall assessment:

A. SYMMETRIC

B. ASSYMETRIC

C. NOT APPLICABLE

On the basis of these assessments, the workshop sought to identify **categories of transparency and confidence-building measures.**

"Low-hanging fruit": TCBMs that include options with relatively low costs for embarking on them, taking into account political, security, military/operational and practical considerations but, at the same time, relatively modest added value to increasing mutual transparency and confidence-building.

"Challenging": TCBMs that encompass options in which agreement would create difficulties for NATO or Russia, but which are worth exploring first if there would be robust political will by both sides to build mutual trust and confidence.

"Dead-end": TCBMs that embrace options with prohibitive implementation costs in the next decade. Such options seem to be possible only if there would be an unprecedented breakthrough in NATO–Russia relations leading to radical or gradual progress related to NSNW TCBMs.

"Breakthrough": TCBMs with options with low implementation costs, but with significant added value.

2.2. Analysis of Results

The final matrix with the summary of results of the workshop discussions is presented in the APPENDIX to this report. Among the options analysed, participants have not identified any "breakthrough" TCBMs. In the tables: **"X"** denotes the experts' assessment of the positions most likely to be taken by **both NATO and Russia** (joint approach); **"R"** denotes the experts' assessment of the likely position of **Russia**, "**N**" denotes the experts' assessment of the likely position of **NATO**.

2.2.1. "Low-Hanging Fruit"

Regular NATO–Russia joint seminars on nuclear doctrines, policies of NSNW employment

Overview

NATO–Russia discussions on nuclear doctrines and strategies have been conducted four times in the past. The last such session was held in June 2013 at The Hague.[13] Still, the discussions have so far lacked regularity as they were organised only on an ad hoc basis and it is unclear to what extent the seminars built on findings from previous events. Setting up regular sessions on nuclear doctrine would change the continuity and maximise the added value of every meeting. As in the past, joint seminars could be organised within the framework of the NATO–Russia Council.

The scope of discussion could encompass the full spectrum of NATO and Russia deterrence forces, including not only non-strategic weapons but also U.S., UK, French and Russian strategic forces. It could also be broadened by a dialogue on nuclear policies of other states, such as China, India, Pakistan and North Korea.

In addition to doctrines and strategies, joint seminars could include topics such as risk-reduction programs or lessons learnt on NSNW safety and security. Depending on the results of the China-led P5 work on a nuclear terms glossary, discussion on definitions could also be added to the agenda.

[13] "Netherlands' Foreign Minister discusses nuclear seminar," NATO–Russia Council, 1 July 2013, www.nato-russia-council.info/en/articles/20130701-nrc-nuclear-seminar.

The issue of the required level of transparency proved controversial. According to some experts, the seminars should be of a confidential nature and include NATO and Russia officials only. Making the seminars unclassified may create concerns that some information may reach the public and make participants reluctant to speak. Still, to provide more food-for-thought and direct exchanges of ideas, some suggested that the format of the seminars could be broadened to involve regular participation of invited non-governmental experts from think-tank and academic research institutes (possibly present during one section of the meeting). The appropriate mix of official and non-official participants could reinvigorate the discussion. Another way of fostering mutual understanding could be provided by regular series of track-2 discussions of non-governmental experts organised in private-public partnerships under the NRC umbrella.

Format			Geographical coverage			Level of transparency		
US--Russia	NRC	Other	NATO Europe/ European part of Russia	NATO Europe/US territory/ whole territory of Russia	Other (limited area or global)	Confidential	Public	Other
	X			X	X	X	X	X

Political/Security/Military/Practical Considerations

From the political perspective, regular nuclear doctrine seminars would be advantageous for NATO. It would be a continuation of previous policy and NATO's approach that the more it talks with Russia, the better. In contrast, the seminars would be seen by Russia as marginally advantageous at best. On the one hand, similar events were organised in the past, so a major shift in Russia's policy towards them would not be necessary. On the other hand, Russia has reasons to consider regular nuclear doctrine seminars as politically costly. It may be more exposed to inconvenient questions about its doctrine. For political reasons, Russia may also prefer to discuss nuclear doctrine issues only in the context of the P5 states or an expanded NATO–Russia dialogue with the presence of representatives of the Collective Security Treaty Organisation or Shanghai Cooperation Organisation.

The seminars most likely would have a rather neutral impact on strengthening the perception of security by NATO or Russia. Depending on the content, the seminars could positively influence NATO's perspective due to gaining more clarity about Russia's doctrine, but more likely they will not be too revealing, limiting the discussion to exchange of official talking points. From Moscow's viewpoint, revealing any substantial information about its doctrine may be seen as detrimental to Russia's security. The seminars would, however, not affect any military operational considerations and would be relatively easy to implement in practice.

Political dimension			Security perception			Military/ Operational Dimension			Practical implementation challenges		
A. RISKY (COSTLY)	B. NEUTRAL	C. ADVANTAGEOUS	A. WEAKENING	B. NEUTRAL	C. STRENGTHENING	A. NEGATIVE	B. NEUTRAL	C. POSITIVE	A. DIFFICULT	B. MEDIUM	C. EASY
R	R	N		N/R	N		N/R				N/R

Effects/Added Value

The joint seminars proposal is one of a few measures in which the political need for reciprocity does not apply. Most likely, the seminars would have rather modest or no impact on mutual confidence and predictability or on increasing prospects for any future arms control measure related to NSNW. This may, however, change depending on the content of the discussions. Some added value may be provided by forging more closer inter-personal relationships between NATO and Russia officials, which can be facilitated by making the events regular.

Mutual confidence and predictability			Arms Control Policy			Reciprocity		
A. SIGNIFICANT	B. MODEST	C. NO CONTRIBUTION	A. CONDUCIVE	B. NEUTRAL	C. DETRIMENTAL	A. SYMMETRIC	B. ASSYMETRIC	C. NOT APPLICABLE
	N/R			N/R				N/R

Joint nuclear accident/incident response tabletop and "live" exercises

Overview

Joint nuclear accident/incident response live exercises can be organised in various formats, including in the framework of the NATO–Russia Council. Since 2004, NRC experts have participated in four nuclear weapons safety field demonstrations aimed at increasing transparency, developing a common understanding of nuclear weapons safety procedures, and building confidence on the full range of capabilities to respond effectively to emergencies involving nuclear weapons. The exercises were held on the territories of all NATO nuclear weapons-owning states and Russia. They include the 2004 "Avaria" Nuclear Weapons Accident Response Capabilities Demonstration Exercise in Russia, 2004 "Senator" Exercises in UK, 2006's "CAPEX" in the U.S., and 2007's "DENUX" in France. In addition, in 2007 the NRC held a seminar on nuclear weapons incident/accident lessons learnt and in 2010 on potential responses to the detection of improvised nuclear or radiological devices (2010). The exercises were confidential but with public information available about their content.[14]

In addition, similar exercises were organised within the framework of the U.S.–Russian bilateral working group for military cooperation. The "Crimson Rider" series of exercises took place in August 2011 in the U.S. and in July 2013 in Russia.[15] So far, there have not been similar exercises conducted in the context of the P5, which seems also a useful way forward.

Format			Geographical coverage			Level of transparency		
US--Russia	NRC	Other	NATO Europe/ European part of Russia	NATO Europe/US territory/ whole territory of Russia	Other (limited area or global)	Confidential	Public	Other
X	X	X		X	X	X	X	

[14] "NATO–Russia Council: Practical Cooperation Fact Sheet," October 2013, www.nato-russia-council.info/media/104666/nato-russia_council_factsheet_final_2013-11-07_trilingual.pdf, p. 10; "NRC Nuclear Safety Exercises: 10 Years, 10 Stories Anniversary Feature," 8 November 2012, www.nato-russia-council.info/en/articles/20121108-nrc-10-years-nuclear; K. Kubiak, "NATO and Russia Experiences with Nuclear Transparency and Confidence-building Measures," background paper for the workshop "Non-Strategic Nuclear Weapons in Europe: Transparency and Confidence-Building Measures in Practice," SWP, Berlin, 27–28 March 2014, www.swp-berlin.org/fileadmin/contents/products/arbeitspapiere/wp_kubiak_April2014.pdf.

[15] See more: "'Crimson Rider' against nuclear terrorism," *Voice of Russia*, 27 July 2011, voiceofrussia.com/2011/07/27/53802554; "Russian, U.S. military will counter a mock terrorist attack in joint exercises," 26 July 2011, *Russia Today*, http://rt.com/politics/russia-us-security-exercises/; "Military Cooperation: Past Events," www.state.gov/p/eur/ci/rs/usrussiabilat/c38712.htm.

Political/Security/Military/Practical Considerations

As with the seminars, the accident/incident response exercises would be seen by Russia as politically costly or neutral, and by NATO generally as politically advantageous. It would be, however, politically risky for NATO to organise such events on the territories of European states where U.S. B-61 bombs are based, as it could bring unwanted attention to their role as hosting nations or spark anti-nuclear public protests. NATO nuclear-host states most likely will not be interested in organising such events in the vicinity of active nuclear storage sites or in other parts of their territories that would also confirm their nuclear role. On the other hand, organising such events on the territories of non-nuclear NATO members that do not host U.S. weapons does not seem to have any practical added value.

Lessons learnt from exercises organised on the territories of official nuclear weapons states may positively impact their preparedness and readiness for handling any nuclear weapons-related accident. Practical challenges would be rather related to financial costs and may vary depending on the scale of the exercises. The exercises will not impact the security calculations (deterrence and reassurance) of NATO members or Russia.

Political dimension			Security perception			Military/ Operational Dimension			Practical implementation challenges		
A. RISKY (COSTLY)	B. NEUTRAL	C. ADVANTAGEOUS	A. WEAKENING	B. NEUTRAL	C. STRENGTHENING	A. NEGATIVE	B. NEUTRAL	C. POSITIVE	A. DIFFICULT	B. MEDIUM	C. EASY
R	R	N		N/R			N/R	N/R		N/R	N/R

Effects/Added Value

The joint exercises would not have any practical or political impact on the prospects for an arms-control agreement related to NSNW. Even if Russia agrees to such steps, engagement would not mean that Russia would be more willing to pursue arms control. Joint exercises will be of limited value in building-confidence about the intentions of both NATO and Russia. They could, however, foster confidence about the safety and security of the respective arsenals. It may strengthen NATO members' confidence that, even if some Russian nuclear weapons are located near their territories, Russia has effective mechanisms to make them invulnerable to theft or terrorist acts.

Mutual confidence and predictability			Arms Control Policy			Reciprocity		
A. SIGNIFICANT	B. MODEST	C. NO CONTRIBUTION	A. CONDUCIVE	B. NEUTRAL	C. DETRIMENTAL	A. SYMMETRIC	B. ASSYMETRIC	C. NOT APPLICABLE
	N/R	R		N/R		N/R		

2.2.2. "Challenging" TCBMs

Collaboration on development of verification techniques, including resumption of joint work on non-intrusive verification measures

Overview

In the foreseeable future, collaborative projects on verification techniques seems possible only in the bilateral U.S.–Russia framework. Joint lab-to-lab work on non-intrusive warhead dismantlement verification techniques was conducted in the 1990s by the Sandia National Laboratory and the Russian Federal Nuclear Center–All Russian Research Institute of Technical Physics (VNIITF) located in Snezhinsk. So far, Russia has not expressed any interest in the UK–Norway Initiative on Nuclear Warhead Dismantlement Verification. In principle, Russia has been reluctant to discuss sensitive nuclear weapons issues with non-nuclear weapons states. Such work could be conducted only through tightly guarded, confidential channels.

Format				Geographical coverage				Level of transparency		
US--Russia	NRC	Other		NATO Europe/ European part of Russia	NATO Europe/US territory/ whole territory of Russia	Other (limited area or global)		Confidential	Public	Other
X						X		X		

Political/Security/Military/Practical Considerations

While the resumption of cooperation would most likely be of political interest to the U.S., it would require a high-level political decision in Russia. Because the previous cooperation was perceived by Russia as too sensitive, it was disrupted in 1998 by Russian security services.

Apart from political problems, such work would pose practical challenges. For Russia, testing of verification techniques would not be allowed at active and inactive nuclear storage facilities. It would have to be conducted either in the U.S. or under artificial, laboratory conditions.

Political dimension				Security perception				Military/ Operational Dimension				Practical implementation challenges		
A. RISKY (COSTLY)	B. NEUTRAL	C. ADVANTAGEOUS		A. WEAKENING	B. NEUTRAL	C. STRENGTHENING		A. NEGATIVE	B. NEUTRAL	C. POSITIVE		A. DIFFICULT	B. MEDIUM	C. EASY
R		N			N/R				N/R			R	N/R	N

Effects/Added Value

Joint work on non-intrusive verification measures would be extremely important as a preparatory step facilitating future arms control agreements related to non-strategic nuclear weapons. Because verification techniques from other arms control agreements would not apply, the development of new verification techniques is a must. However, for this very reason, any signal implying Russia's readiness to engage in an arms-control process related to non-strategic nuclear weapons by studying verification techniques might be seen by Russia as inconsistent with its policy priorities.

Any such collaboration would most likely be perceived as having modest or no contribution (in case of Russia) to building mutual confidence. Considerations about reciprocity do not seem to apply to joint work.

Mutual confidence and predictability			Arms Control Policy			Reciprocity		
A. SIGNIFICANT	B. MODEST	C. NO CONTRIBUTION	A. CONDUCIVE	B. NEUTRAL	C. DETRIMENTAL	A. SYMMETRIC	B. ASSYMETRIC	C. NOT APPLICABLE
	N/R	R	N	R	R			N/R

Information exchanges about historical numbers and about total current numbers

Overview

Discussion during the workshop showed that information exchanges about the number of NSNW dismantled and warheads disposed since the 1991/1992 PNIs is intrinsically linked to the exchange of information about the current stockpiles of U.S. and Russian non-strategic nuclear weapons, including "deployable" warheads with various reserve statuses and warheads awaiting dismantlement. It seems practically impossible to do one without doing the other.

For the U.S., providing information about exact numbers of NSNW dismantled since the first PNI declaration by President George W. Bush (from 27 September 1991) would indirectly reveal the current numbers of its non-strategic nuclear weapons. In May 2010, the U.S. released information that "the number of U.S. non-strategic nuclear weapons declined by approximately 90 percent from September 30, 1991 to September 30, 2009."[16] The same percentage reductions of NSNW made since 30 September 1991 was repeated in a fact sheet published by the U.S. in April 2014.[17] Information about the exact number of warheads dismantled, compounded with the known percentage scale of reductions would show an approximate number of the current arsenal.

Similarly for Russia, sharing the number of warheads dismantled since the PNIs could give an indication about the number of current warheads assigned to non-strategic nuclear weapons. Russian warheads have approximately a 10–12 year lifetime. Since the PNIs, many of the warheads have been eliminated and the retaining stock refurbished. With a known number of dismantled warheads and the rate of replacement of different types of NSNW, one can determine the number of the current stockpiles. Also, Russia has indicated that its non-strategic arsenal "does not exceed 25% of the amount possessed by the USSR in 1991."[18]

Keeping this information in mind, it is obvious that a direct exchange of current numbers would provide more accurate data than information based solely on estimates. In case of information about the total number of historical and current numbers, uncertainties related to numbers of different types of Russian non-strategic nuclear weapons would remain.

The U.S.–Russia format seems to be the most appropriate for exchanges of information about historical and current numbers (despite calls by some experts to make the numbers available, e.g., to NPT members). In case of historical numbers it seems understandable, as the benchmark is provided by bilateral PNIs. However, inclusion of French and UK dismantled nuclear warheads that were assigned to sub-strategic roles would provide a fuller picture of reductions in Europe. With regards to current numbers, limiting exchanges to the U.S. and Russia would avoid

[16] "Fact Sheet: Increasing Transparency in the U.S. Nuclear Weapons Stockpile," 3 May 2010, www.defense.gov/npr/docs/10-05-03_Fact_Sheet_US_Nuclear_Transparency__FINAL_w_Date.pdf.

[17] "Fact Sheet: Transparency in the U.S. Nuclear Weapons Stockpile," 29 April 2014, www.state.gov/documents/organization/225555.pdf.

[18] "Statement by Ambassador Alexey Borodavkin, Permanent Representative of the Russian Federation to the Conference on Disarmament, Geneva," 22 May 2012, www.geneva.mid.ru/sq/dis_conf_003.html.

political problems related to the inclusion of French air-delivered nuclear cruise missiles, as France would most likely oppose it.

Information exchanges about historical and current numbers would apply to the entire stockpile of the U.S. and Russia, not only to warheads that currently are or were based in Europe. Russia would be especially interested in more information about non-strategic weapons based in the U.S.

It is likely that Russia would prefer that such exchanges of information would be confined to the U.S.–Russia channel and confidential information would not be made available to other countries or the public. However, the U.S. may insist on the right to provide such information to its NATO allies, otherwise the value-added of such exchanges to European NATO members might be perceived as limited. A lack of shared knowledge about Russian stockpiles could also complicate internal NATO discussions about any changes in its nuclear posture.

Format				Geographical coverage				Level of transparency		
US--Russia	NRC	Other		NATO Europe/ European part of Russia	NATO Europe/US territory/ whole territory of Russia	Other (limited area or global)		Confidential	Public	Other
X					X			X		

Political/Security/Military/Practical Considerations

For the U.S., revealing information about the exact numbers of NSNW dismantled since the first PNI declaration by President George H.W. Bush (from 27 September 1991) and the current non-strategic nuclear stockpile would require a policy shift and could be seen as being politically costly.

However, it may be argued that the payoff from getting information about the number of Russian NSNW could be perceived as outweighing any costs. Russian reciprocity could make such a move politically advantageous. In general, any such exchange could strengthen NATO members' perception of security as it would demonstrate Russia's openness. As information would be confined to confidential channels, some NATO members, however, might feel unsatisfied that they cannot get some political credit for demonstrating to the public and outside world the exact scope of NATO's reduction of nuclear weapons in Europe.

For Russia, revealing information about current or historical numbers would be seen as a major (and unnecessary) political concession to NATO. Also, providing information about current numbers may reveal information about underinvestment in its nuclear industry. It may show that it has to refurbish a significant number of weapons with less manpower or money than in previous years.

The impact on Russia's perception of security seems more nuanced. On the one hand, showing directly or indirectly its own numbers may be perceived as having a negative impact on Russia's deterrence effect, particularly ambiguity, which would be weaker. On the other hand, providing the number of non-strategic weapons could be perceived as a way to send a strong message that Russia retains formidable nuclear capability.

For both NATO and Russia, the exchange of information on historical and current numbers would not have any impact on the handling of their nuclear arsenals. However, for both countries, it would pose practical challenges as it would require a painstaking, multi-level intra-governmental declassification process.

For the U.S., it would require breaking down numbers revealed in 2010 and 2014 (total size of stockpile and warheads dismantled in fiscal years 1994-2013) into subcategories and updating it. In accordance with the Atomic Energy Act of 1994, providing such information to another country would require the involvement of the departments of Energy and Defense, and authorisation from the president. The communication of atomic information to other countries or international organisations is possible for mutual defence purposes and for support of a programme for the control and accounting of atomic weapons, fissile material and other weapons material.[19]

For Russia, the declassification process would also be difficult, but as with the U.S., not insurmountable. However, with regards to historical numbers, setting the record straight might not be easy as in the 1990s as in Russia there seems to be some problems with accounting of nuclear weapons.

Political dimension			Security perception			Military/ Operational Dimension			Practical implementation challenges		
A. RISKY (COSTLY)	B. NEUTRAL	C. ADVANTAGEOUS	A. WEAKENING	B. NEUTRAL	C. STRENGTHENING	A. NEGATIVE	B. NEUTRAL	C. POSITIVE	A. DIFFICULT	B. MEDIUM	C. EASY
R		N	R	R	N		N/R			N/R	

Effects/Added Value

For NATO, if Russia were to reveal information about its stockpile, it would be most likely perceived as a significant step toward building confidence and a practical measure facilitating future arms-control discussions. It would end speculation about the size of Russia's stockpile, especially if Russia would agree to make this information available to all NATO allies.

The credibility of the revealed data would be the key issue. If information provided by Russia or the U.S. differs from intelligence information, it might lead to suspicions. Possibly, information about historical numbers would need to be provided to back up any declarations about current numbers. Also, it may be argued that transparency about numbers may have a detrimental effect on NATO reductions if the exchange of information would confirm a great disparity between the numbers of weapons belonging to NATO and Russia. Some NATO members will not want to cut nuclear forces in Europe further without more significant Russian cuts. Still, as the disparity between NATO and Russia is currently an issue, it would not differ from the current situation in which NATO members already refer to the "disparity" between NATO and Russia without knowledge of the exact numbers.

Russia, most likely, would see its readiness to exchange data as an asymmetrical goodwill gesture of showing more openness to transparency. For Russia, it would only have modest value in terms of confidence-building as it seems to have enough information about the size of the U.S. non-strategic nuclear stockpile. The key question is whether Russia would like to build confiden-

[19] According to the U.S. classification rules, information about stockpile quantities is an example of Formerly Restricted Data (FRD). However, in case of foreign dissemination, it is treated as Restricted Data (RD). Approval of exchange is a multi-step process that requires the involvement of the DOE (which has sole responsibility for identifying and de-classifying RD) and the DoD (which shares responsibility with DOE for identifying and declassifying FRD). The Atomic Energy Act states there can be no exchange of RD (or FRD) unless specifically authorised by the president pursuant to an agreement for cooperation. "Classification of Nuclear Weapons-related Information. Restricted Data and Formerly Restricted Data (RD and FRD)," June 2012, slides 10, 14 and 51, http://energy.gov/sites/prod/files/hss/Classification/docs/CTI-Training-RD-FRD-Briefing.pdf. See also, "Nuclear Stockpile Data Exchange with the Russian Federation," non-paper provided to Russia, October 1994, http://www2.gwu.edu/~nsarchiv/NSAEBB/NSAEBB447/1994-10%20Department%20of%20State.%20Nuclear%20Stockpile%20Data%20Exchange%20with%20the%20Russian%20Federation.pdf.

ce and predictability with its European neighbours, the security perception of which is directly affected by its nuclear stockpile.

Transparency on numbers could also be perceived as contrary to Russia's arms-control interests. In Russia's view, non-strategic nuclear weapons are not a negotiating priority. Any agreement related solely to non-strategic nuclear weapons would be perceived as yielding to NATO's demands.

However, providing information about numbers would not necessarily mean that Russia would be willing for engagement in any negotiations on limitations or verification. Also, the impact of "clear disparity" on Russia's goal to get NATO concessions related to conventional forces and missile defence would be unclear. On the one hand, NATO members might be more willing to agree to some Russian demands related to these areas. On the other hand, a disparity with regards to nuclear forces may only stiffen the position of some NATO countries that the Russian theatre nuclear superiority requires a clear NATO advantage in conventional forces.

Mutual confidence and predictability				Arms Control Policy				Reciprocity		
A. SIGNIFICANT	B. MODEST	C. NO CONTRIBUTION		A. CONDUCIVE	B. NEUTRAL	C. DETRIMENTAL		A. SYMMETRIC	B. ASSYMETRIC	C. NOT APPLICABLE
N	N/R			N	R	R		N	R	

NATO reaffirmation of nuclear "Three No's"

Overview

As a confidence-building measure, NATO members may publicly reaffirm the nuclear "Three No's" political pledge that was part of the 1997 NATO–Russia Founding Act. Reiterating 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" may be of added value following Russia's annexation of Crimea. The argument of some NATO members is that as Russia has undermined all the principles of NATO–Russia relations, political pledges that were intrinsically linked with these principles are no longer relevant.[20] Since these NATO members seem to suggest that NATO should not be bound by the pledge not to permanently deploy conventional substantial combat forces on territories of these states (also included in the Founding Act), reaffirming the "three no's" may be seen as a way to assure Russia that NATO does not want NATO–Russia controversies to reach the nuclear level.

While discussion during the workshop focused on reaffirmation of the "Three No's", the other option is to strengthen it by explicit reference to nuclear delivery vehicles, for example, that NATO members have no intention, no plan and no reason to adapt aircraft belonging to new NATO members to nuclear delivery roles. The "Three No's" pledge directly refers only to refraining from the establishment of nuclear weapons storage sites on the territory of new members "whether through the construction of new nuclear storage facilities or the adaptation of old nuclear storage facilities."[21]

[20] "NATO's Eastern Members Seek Bases to Deter Russian Threat," *Bloomberg News*, 2 May 2014, www.bloomberg.com/news/2014-05-01/nato-s-eastern-members-seek-bases-to-deter-russian-threat.html.

[21] "Founding Act on Mutual Relations, Cooperation and Security between NATO and the Russian Federation," *op. cit.*

Format				Geographical coverage				Level of transparency		
US--Russia	NRC	Other		NATO Europe/ European part of Russia	NATO Europe/US territory/ whole territory of Russia	Other (limited area or global)		Confidential	Public	Other
		X				X			X	

Political/Security/Military/Practical Considerations

A reiteration of the nuclear "Three No's" most likely will be seen by some NATO members, such as Poland, as politically sensitive. Political pledges of military restraint in the territories of countries that acceded to NATO since 1997 are generally seen as decisions taken above their heads and have created the perception they are second tier NATO members. In the political climate following Russia's actions in Ukraine, it would be even more politically difficult to reaffirm part of this package without corresponding actions by Russia.

Reaffirmation of the "Three No's" might also be perceived by some NATO members as weakening their security, especially if anxieties about nuclear storage facilities near NATO borders and possible Russian violation/circumvention of the INF Treaty would continue to persist. Even if there is currently no official interest in hosting U.S. weapons in Central and Eastern European States, such a possibility may be seen as providing additional security leverage vis-à-vis Russia. From a military/operational perspective, reaffirmation of the "Three No's" would not change much and would only confirm the status quo. NATO military planners would have to continue to exclude the option of the deployment of nuclear weapons to the territories of new NATO members. While it would be difficult for NATO to arrive at such a decision, reaffirmation itself would be easy to practically implement.

Among the options analysed, reaffirmation of the nuclear "Three No's" is the only option that may be politically advantageous for Russia and might strengthen Russia's security. Still, as long as the "Three No's" are not seriously questioned within NATO, Russia will not see any political and security added value to a reaffirming statement.

Political dimension				Security perception				Military/ Operational Dimension				Practical implementation challenges		
A. RISKY (COSTLY)	B. NEUTRAL	C. ADVANTAGEOUS		A. WEAKENING	B. NEUTRAL	C. STRENGTHENING		A. NEGATIVE	B. NEUTRAL	C. POSITIVE		A. DIFFICULT	B. MEDIUM	C. EASY
N	R	R		N	R	R			N/R					N/R

Effects/Added Value

For NATO, reaffirmation of the "Three no's" would be of significant value only if it accompanied by Russian reciprocal steps, mainly a pledge of nuclear restraint near the borders of Central and Eastern European states. Otherwise, it would be seen as an asymmetric NATO step with a limited confidence-building effect or contribution to any future arms-control agreement.

Russia most likely would not be ready for any reciprocal step stating that reciprocity simply does not apply. A NATO statement would not be perceived as important enough to merit a response.

Mutual confidence and predictability				Arms Control Policy				Reciprocity		
A. SIGNIFICANT	B. MODEST	C. NO CONTRIBUTION		A. CONDUCIVE	B. NEUTRAL	C. DETRIMENTAL		A. SYMMETRIC	B. ASSYMETRIC	C. NOT APPLICABLE
R	N/R	N			N/R				N	R

U.S. and Russian statements reaffirming their commitment to 1991/1992 PNIs

Overview

The Presidential Nuclear Initiatives were parallel unilateral commitments undertaken by presidents of the U.S. and the Soviet Union/Russia in 1991 and 1992. U.S. President George H.W. Bush's pledges from September 1991 and January 1992 included elimination of all U.S. nuclear artillery shells and short-range ballistic missile warheads, and withdrawal of all tactical nuclear weapons from U.S. surface ships, attack submarines and land-based naval aircraft. The reciprocal measures announced by Soviet President Mikhail Gorbachev in October 1991 and Russian President Boris Yeltsin in January 1992 included elimination of all nuclear artillery munitions, nuclear warheads for tactical missiles, and nuclear mines; removal of all tactical nuclear weapons from surface ships, multipurpose submarines, and land-based naval aviation, partial elimination of the stocks of these weapons and placing the rest in "central storage;" and removal from combat units of all nuclear warheads for air defence missiles, their partial elimination, and consolidation of the remaining warheads in central storage. The U.S. and Russia did not exchange any information about the size of their non-strategic nuclear weapons before implementing reductions, the specific types of weapons encompassed by the PNIs, or concrete actions taken to deactivate and dismantle weapons under the PNIs.[22]

The U.S. fulfilled its pledged reduction and withdrawals of deployed weapons by mid-1992. The warhead dismantlement process was completed by the end of the 1990s.[23] Subsequent reductions in U.S. non-strategic nuclear posture in the 1990s and during the George W. Bush presidency have gone beyond the PNIs.

It is unclear whether Russia has implemented its PNI commitments. According to the last official Russian report on this topic at the NPT Prep Com in April 2004, it has "practically" fulfilled it, except for warheads assigned to Ground Forces, where elimination was constrained by a lack of funding and industrial capacity.

Since that time, Russia has not officially confirmed that it has eliminated nuclear warheads for tactical nuclear missiles and has been reluctant to confirm whether the PNIs remain in force. In contrast, a statement by a Russian official from July 2004 indicated that Russia was not bound by the PNIs, which were not an "obligation" but only a "goodwill gesture."[24] The uncertainties related to Russia's approach to the PNI's are strengthened by reports about the nuclear capability of Russia's short-range Tochka and Iskander missiles and possible deployment of sea-launched nuclear cruise missiles on multipurpose submarines.[25] Some experts argue that the development

[22] For the full text of Presidential Nuclear Initiative announcements, see: S.J. Koch, *The Presidential Nuclear Initiatives of 1991–1992*, Center for the Study of Weapons of Mass Destruction Case Study 5, National Defense University, September 2012, http://wmdcenter.dodlive.mil/files/2012/10/CSWMD-Case-Study-5-for-web.pdf, pp. 23–39.

[23] A.F. Woolf, *Nonstrategic Nuclear Weapons*, CRS Report RL32572, 3 January 2014, p. 11. www.hsdl.org/?view&did=749030.

[24] M.A. Pomper, W. Potter, N. Sokov, *op. cit.*, pp. 2, 7.

[25] "Russia Might Still Use Sea-Fired Nuclear Cruise Missiles," *Global Security Newswire*, 14 January 2013, www.nti.org/gsn/article/russia-might-still-deploy-sub-launched-nuclear-cruise-missiles.

of a nuclear warhead for the Iskander missile would not fall under the umbrella of the PNIs. The 1991 and 1992 commitments had applied only to particular types of weapons. Any new non-strategic nuclear weapons system developed since then would not fall under the umbrella of the PNIs.

Taking into account all of this, Russia's statement that it is still committed to implementing the PNI commitments and that it sees the PNI pledges as relevant to the current situation could be perceived as an important transparency and confidence-building measure. Public, parallel, unilateral statements by Russia and the U.S. confirming the PNIs would apply to all U.S. and Russian non-strategic nuclear weapons, no matter where they are located.

Format				Geographical coverage				Level of transparency		
US--Russia	NRC	Other		NATO Europe/ European part of Russia	NATO Europe/US territory/ whole territory of Russia	Other (limited area or global)		Confidential	Public	Other
X					X	X			X	

Political/Security/Military/Practical Considerations

Reaffirmation of the PNI's by the U.S. and Russia would be advantageous for NATO from both a political and security perspective. It would not be related to any military/operational or practical challenges.

In contrast, for Russia it would have a negative political effect. If Russia has developed a nuclear warhead for the Iskander missile, maintaining ambiguity seems to serve Russia's security interests. Reaffirmation of the PNI's would undercut this option. If there is no nuclear warhead for the missile, by revealing it Russia could see a weakened deterrence value to these short-range missiles.

If Russia has not adhered to the PNIs, preparations to announce their reaffirmation would negatively impact the operational and military dimension of Russia's deterrence. Russia's military would have to adapt its nuclear posture accordingly and would have fewer nuclear options available. It would also pose some practical challenges. It would require defeating the opposition of the defence establishment and bureaucratic effort related to reconfirming the commitment.

Political dimension				Security perception				Military/ Operational Dimension				Practical implementation challenges		
A. RISKY (COSTLY)	B. NEUTRAL	C. ADVANTAGEOUS		A. WEAKENING	B. NEUTRAL	C. STRENGTHENING		A. NEGATIVE	B. NEUTRAL	C. POSITIVE		A. DIFFICULT	B. MEDIUM	C. EASY
R		N		R		N		R	N			R		N

Effects/Added Value

The U.S. and its NATO allies do not seem to believe that Russia has implemented the PNIs, so it may be questionable whether any new Russian declaration would change that. Nonetheless, it would be a profound step, as since Boris Yeltsin, none of Russia's presidents have confirmed the PNIs. If confirmed, it would be difficult for any Russian president to risk allegations of non-compliance. Also, even if Russia, while reconfirming the PNIs were to declare that it possessed nuclear capable short-range missiles, it might be seen as a step facilitating transparency and greater predictability.

For Russia, a similar U.S. declaration would not have any confidence-building effect as the U.S. has already implemented the PNIs, even though some Russian experts express doubt as to whether the U.S. has implemented the pledge to retire nuclear-armed Tomahawk cruise missiles for multi-purpose submarines.

In contrast to NATO members, which would see PNI reaffirmation by Russia as a reciprocal step (as the U.S. has already made good on its pledge), it would be perceived by the former as a one-sided concession that would require more from Russia than from the U.S.

Reaffirmation of the PNIs might be perceived by NATO members as an important step towards a future verifiable arms-control accord. Russia, however, would perceive it as pushing it in a direction it does not want to go. It also may not change any of Russia's preconditions for discussions on NSNW.

Mutual confidence and predictability				Arms Control Policy				Reciprocity		
A. SIGNIFICANT	B. MODEST	C. NO CONTRIBUTION		A. CONDUCIVE	B. NEUTRAL	C. DETRIMENTAL		A. SYMMETRIC	B. ASSYMETRIC	C. NOT APPLICABLE
N	N	R		N		R		N	R	

Pledges on transparent modernisation of NSNW

Overview

The NATO member states and Russia can declare through confidential channels that they will exchange basic information about life-extension programmes, modernisation, and certification of non-strategic nuclear weapons, including warheads and associated delivery vehicles. Such exchanges could be pursued within the framework of the NRC, which would allow taking into account Russian dual-capable aircraft and NATO non-nuclear weapons states and possibly the UK and French nuclear arsenals. Agreement on transparent modernisation could also be part of a bilateral U.S.–Russia agreement focused on nuclear warheads. At the same time, a transparent modernisation pledge would not limit the freedom of the concerned states to introduce new or improved types of weapons.

Transparent modernisation pledge may be also considered in the P5 format, but proposing it would most likely only block any progress due to probable opposition by China.

Format				Geographical coverage				Level of transparency		
US--Russia	NRC	Other		NATO Europe/ European part of Russia	NATO Europe/US territory/ whole territory of Russia	Other (limited area or global)		Confidential	Public	Other
X	X	X			X	X		X		

Political/Security/Military/Practical Considerations

Such measure would be politically risky for Russia, as it would require sharing information about different types of non-strategic nuclear weapons in its arsenal. It would be especially difficult in the context of ambiguity related to Russia's adherence to PNIs. Transparency about its nuclear capabilities would most likely be seen by Russia as weakening its security.

Such an exchange will be seen as rather advantageous for NATO, as political and security benefits would exceed any costs. This would be especially the case if exchanges of information do not involve any public releases related to modernisation and replacement plans of DCAs.

From the military/operational perspective, transparency about own capabilities may negatively affect the planning of the nuclear mission or its execution, especially if it would require providing information about the numbers and types of nuclear delivery platforms. Ambiguity about nuclear capabilities could be perceived as advantageous to both NATO and Russia. Also, it may complicate the introduction of more effective capabilities into service. Still, it might be argued that knowledge about the nuclear posture of the other side, may neutralise the negative effects.

For both NATO and Russia, a transparent modernisation pledge would create practical problems, as it would require changing declassification rules and setting new procedures for the exchange of nuclear-related information.

Political dimension			Security perception			Military/ Operational Dimension			Practical implementation challenges		
A. RISKY (COSTLY)	B. NEUTRAL	C. ADVANTAGEOUS	A. WEAKENING	B. NEUTRAL	C. STRENGTHENING	A. NEGATIVE	B. NEUTRAL	C. POSITIVE	A. DIFFICULT	B. MEDIUM	C. EASY
R		N	R		N	N/R	N			N/R	

Effects/Added Value

For NATO members, a transparent modernisation pledge would have a significant confidence-building effect as NATO would gain official access to information about Russia's nuclear capabilities. Such measure may also open the way to a more robust dialogue about the purpose of NATO's and Russia's nuclear doctrines and strategies. Also, the information exchanged could prepare the groundwork for arms-control talks.

For Russia, such an exchange would have a modest confidence-building effect at best. It allegedly already has sufficient information about NATO's nuclear capabilities. Of added value for Russia would be, however, additional assurance that it will have up-to-date knowledge about any changes in NATO's nuclear posture.

Russia may see this measure as detrimental to its arms-control goals, as more transparency on nuclear weapons issues may weaken Russia's position in other fields, including missile defence and conventional forces. It would also see it as asymmetric. Information about NATO's plans may not be worth revealing data about its own nuclear potential.

Mutual confidence and predictability			Arms Control Policy			Reciprocity		
A. SIGNIFICANT	B. MODEST	C. NO CONTRIBUTION	A. CONDUCIVE	B. NEUTRAL	C. DETRIMENTAL	A. SYMMETRIC	B. ASSYMETRIC	C. NOT APPLICABLE
N	R	R	N		R	N	R	

2.2.3. "Dead Ends"

Information exchanges about all former (deactivated) NSNW storage facilities

Overview

For Russia, exchange of information about any nuclear sites, including all deactivated facilities, is a red line. It is not interested in information about inactive sites in Western Europe or in the former Warsaw Pact member states, where nuclear warheads were based during the Cold War. Russia is aware of the locations of active and inactive NATO nuclear storage sites. Having this information officially confirmed would not outweigh the costs imposed on Russia if it had to provide information about its own facilities. An official exchange of information would only be valuable if the U.S. weapons were removed from Europe and infrastructure for re-deployment dismantled as Russia would be interested in verifying this. Russia would be more interested in sites in the continental United States, where non-deployed warheads are or have been stored. It would also prefer that any arrangements related to sites would be pursued through a strictly classified bilateral U.S.–Russia channel as, for it, the fewer countries that know about nuclear-related facilities in Russia the better.

In contrast, most NATO members would prefer that any exchanges related to inactive or active sites be pursued through the NRC. If Russia would like any information about inactive bases on their territories most likely they would make such information contingent upon their involvement in the process.

Format				Geographical coverage				Level of transparency		
US--Russia	NRC	Other		NATO Europe/ European part of Russia	NATO Europe/US territory/ whole territory of Russia	Other (limited area or global)		Confidential	Public	Other
R	N			N	R			X		

Political/Security/Military/Practical Considerations

From a political standpoint, exchange of information about inactive or active sites would be one of the last measures considered by Russia. Agreeing to such a step would require a radically different political relationship with NATO.

From the Russian perspective, the level of transparency concerning nuclear storage facilities was extremely high in the 1990s. The U.S. had almost full transparency about closed and active storage sites in Russia. Although U.S. officials and staff did not have inside access, they worked on the perimeter of many facilities in the framework of programmes aimed at improving their safety and security. Currently, Russia have no political incentives to move further on these issues than it did in the past. Also, Russia has complained that cooperation with the U.S. in the framework of the CTR program led to leaks of classified information about Russia's nuclear sites that informed many non-governmental reports about nuclear storage facilities in Russia. The inability of the U.S. to secure classified information was one of the reasons why Russia narrowed the CTR program and refocused it from the military to civilian sector.

NATO has been very sensitive about providing any official information about active nuclear sites, neither confirming nor denying non-governmental expert reports. However, reaching consensus on inactive sites would also be very difficult, raising questions as to why former sites are an issue for NATO and why somebody would object to an exchange of information about sites that are no longer operationally useful.

For both NATO and Russia, information exchanges about inactive former sites might be politically problematic as that might lead to some inconvenient questions about why some particular sites were not included on the list and why. It could also have negative implications on military/operational considerations as revealing information about former sites could indirectly reveal information about current sites. From a practical implementation perspective, the exchange of information about former sites would require a demanding declassification effort.

In contrast to Russia, NATO members may see information exchange as strengthening their perception of security. However, information exchange not accompanied by a verification process would most likely not put an end to anxieties about Russian nuclear storage sites near NATO borders.

Political dimension			Security perception			Military/ Operational Dimension			Practical implementation challenges		
A. RISKY (COSTLY)	B. NEUTRAL	C. ADVANTAGEOUS	A. WEAKENING	B. NEUTRAL	C. STRENGTHENING	A. NEGATIVE	B. NEUTRAL	C. POSITIVE	A. DIFFICULT	B. MEDIUM	C. EASY
N/R			R	N	N	N.R	N/R		N/R	N/R	

Effects/Added Value

If reciprocated by Russia, information exchanges about former sites, depending on the content, may have a confidence-building effect on NATO members. For Russia it would not have such value and would be perceived as asymmetrical.

information exchanges about former sites would be a step forward towards a future arms control agreement involving verification of current sites. While it would be in line with NATO policy, Russia most likely would see it as a step too far.

What is important to note is the reluctance of both sides to such a move raises questions about how far the NATO and Russia dialogue on confidence-building can go. If exchange of information about inactive storage sites seems highly unlikely, what about any measures related to active sites. Even reciprocal visits to former sites, which were perceived as very symbolic and an uncomplicated confidence-building measure, look overly ambitious.

Mutual confidence and predictability			Arms Control Policy			Reciprocity		
A. SIGNIFICANT	B. MODEST	C. NO CONTRIBUTION	A. CONDUCIVE	B. NEUTRAL	C. DETRIMENTAL	A. SYMMETRIC	B. ASSYMETRIC	C. NOT APPLICABLE
N	N	R	N		R	N	R	

Notifications about movements of NSNW

Overview

On notification of movements, the extensive system of notification, including notifications of movements of mobile ICBM launchers, was envisaged in the START II Treaty.[26] More limited

[26] See more: "Protocol on Notifications Relating to the Treaty Between the United States of America and the Union of Soviet Socialist Republics on the Reduction and Limitation of Strategic Offensive Arms, Section II: Movement of Items Subject to Limitations in the Treaty," https://www.fas.org/nuke/control/start2/text/notifica.htm#II.

notifications of movements were included in the New START Treaty.[27] However, similar notifications do not seem possible for NSNW. In contrast to strategic nuclear weapons, NSNW are not deployed. Warheads are located in nuclear storage sites. There are no NSNW forces on alert. NATO's and Russia's non-strategic nuclear weapons (understood as warheads with delivery vehicles) do not move like strategic weapons.

Still, consideration of notification, on a voluntary basis, by NATO and Russia of any plans to move non-strategic nuclear weapons was one of the TCBM options recommended in the April 2011 non-paper signed by 10 NATO allies.[28] Such classified notifications could take place within the NRC and could apply to the whole territory of Russia and NATO members. Notification of movements could take various forms, including providing information about routine or extraordinary movements or notifications about changes in military status.

Format				Geographical coverage				Level of transparency		
US--Russia	NRC	Other		NATO Europe/ European part of Russia	NATO Europe/US territory/ whole territory of Russia	Other (limited area or global)		Confidential	Public	Other
	X				X			X		

Political/Security/Military/Practical Considerations

For Russia, notifications about the movement of NSNW would be politically costly and could negatively impact Russia's perception of security. The unannounced movement of nuclear-capable delivery means, such as Iskander short-range missiles, or ambiguity as to whether nuclear warheads are based in certain areas, seems to continue to play a role in Russia's foreign and security policy.[29]

For Russia, it also would be very difficult to provide information about the movement of non-strategic nuclear weapons from storage to industrial facilities and back. Russia's nuclear warheads seem to constantly move two or three echelons per month, which is related to the process of maintenance and refurbishment of nuclear warheads. Also, such a step would make sense only if the current locations of nuclear storage facilities are known, and Russia is not interested in providing such information. Such information would require a high degree of confidence in safeguarding sensitive information because, for example, for Russia any information about transportation of nuclear warheads is top secret. Finally, such movements could provide information about the rate of replacement and refurbishment of Russia's warheads, which could indicate Russia's current number of weapons.

[27] Notifications of movements in the New START treaty encompass: notification of the exit of solid-fuel ICBMs or solid-fuel SLBMs from a production facility, notification of movement of ICBMs to or from a test range located outside national territory, notification of visit and conclusion of a visit of a heavy bomber to a specific location or geographic region that exceeds 24 hours, notification of the beginning and conclusion of a major strategic exercise involving heavy bombers and the advance notification of any launch of an ICBM or SLBM in accordance with the 1988 Ballistic Missile Launch Notification Agreement. "Annex on Notifications to the Protocol to the Treaty Between the United States of America and the Russian Federation on Measures for the Further Reduction and Limitation of Strategic Offensive Arms," Section III, www.state.gov/documents/organization/141294.pdf.

[28] "Non-Paper Submitted by Poland, Norway, Germany and the Netherlands on increasing transparency and confidence with regard to tactical nuclear weapons in Europe, *op. cit*.

[29] For example, in December 2013 there were reports about the deployment of nuclear capable Iskander missiles in Kaliningrad, which was later denied by Russian President V. Putin. "Putin Says No Iskanders Deployed in Kaliningrad," *Ria Novosti*, 19 December 2014, http://en.ria.ru/military_news/20131219/185723285/Putin-Says-No-Iskanders-Deployed-in-Kaliningrad.html.

NATO most likely would not be interested in providing Russia with detailed and advance information about any movement of weapons from Europe to the U.S. and back, which would accompany the process of the B-61 bomb life-extension programme. Reaching political consensus on such a step would be difficult. Providing Russia with information that some number of weapons have left Europe may create anxieties about attempts to block their return, for example by leaks to the public. It seems that NATO would be most interested in notification after the whole process is concluded. Still, it might be argued that security benefits from information about the movement of Russian weapons could outweigh any costs.

Notifications about extraordinary movements of large numbers of weapons over great distances, for example, tens or hundreds of weapons over a hundred kilometres, seems to be beneficial to both sides only if the relocation resulted from security and safety concerns about nuclear warheads based in a specific location. In such a situation, the notification could alleviate any concerns that the movement stems from aggressive intentions, especially if weapons are relocated closer to the NATO–Russia border.

Notifications about such movements of nuclear weapons during periods of political tensions or during a crisis would most likely be seen as escalatory, even if the aim of the notification was to avoid the perception of preparation for actual use. The same effect would be achieved by notifications about the change of readiness status of nuclear forces or about the deployment of warheads on delivery vehicles. In fact, such a decision would not require moving warheads great distances. For example, for Russia's Northern Fleet, it would just require moving the warhead from the central storage site located next to the fleet's main base.[30] For NATO, nuclear storage sites are located at air bases, and moving a warhead from a storage site to dual-capable aircraft would not require significant movement.

Voluntary notifications about movements and change of alert statuses of nuclear weapons during crises between NATO or Russia and some third parties might be of interest, for example, if both NATO and Russia were in the future involved in conflicts with nuclear-armed states at their southeastern borders. However, such notifications would depend on a concrete political context.

For political and practical reasons, notifications about nuclear-weapons-related exercises are also problematic. As exercises for using dual-capable delivery vehicles in a nuclear mission do not involve real nuclear warheads, conventional arms-control mechanisms are more appropriate, although the scale of such exercise would most likely fall below any existing confidence-building measure. Also, notifications about nuclear-related exercises would require prior exchanges of information about types of nuclear weapon delivery vehicles, which would be politically difficult for Russia.

Political dimension			Security perception			Military/ Operational Dimension			Practical implementation challenges		
A. RISKY (COSTLY)	B. NEUTRAL	C. ADVANTAGEOUS	A. WEAKENING	B. NEUTRAL	C. STRENGTHENING	A. NEGATIVE	B. NEUTRAL	C. POSITIVE	A. DIFFICULT	B. MEDIUM	C. EASY
N/R			R		N	N/R			N/R		

[30] "Russia builds huge nuclear missile depot in Severomorsk," *Barents Observer*, 13 December 2013, http://barentsobserver.com/en/security/2013/12/russia-builds-huge-nuclear-missile-depot-severomorsk-13-12.

Effects/Added Value

Notifications about movements do not have a straightforward impact on confidence-building. While in some situations providing information about movements can to some extent alleviate concerns that might result if the information was gained solely by intelligence means, in some situations the notifications might be seen in fact as an instrument of blackmail leading to reciprocal, escalatory steps. In some cases, for example, nuclear-related exercises, notifications may lead to many inconvenient questions about the purpose of nuclear weapons-related training and the role of non-strategic nuclear weapons in the overall deterrence doctrine.

Rather than through notifications, more confidence could be provided by information exchanges about nuclear weapons release procedures, which might be part of seminars on nuclear doctrines.

In general, notification of routine movements seems to be a result of arms control, as in the case of U.S.–Russia START agreements. They seem to be premature, absent any arms-control arrangement that includes verification of the location of warheads with a full accounting of changes of locations.

Reciprocity does not apply to extraordinary movements, as in such cases notifications are made when one of the sides believes that it is in its interest. With regard to routine movements (including movements related to maintenance of weapons), Russia would see reciprocal notifications as asymmetrical. In contrast to constantly moving Russian warheads, U.S. nuclear warheads in Europe are attributed to a particular location.

Mutual confidence and predictability			Arms Control Policy			Reciprocity		
A. SIGNIFICANT	B. MODEST	C. NO CONTRIBUTION	A. CONDUCIVE	B. NEUTRAL	C. DETRIMENTAL	A. SYMMETRIC	B. ASSYMETRIC	C. NOT APPLICABLE
N		R	N		R	N	R	

Removal of NSNW away from NATO–Russia borders

Overview

Removal of non-strategic nuclear weapons away from NATO–Russia borders is one of NATO's political goals enshrined in the 2010 Strategic Concept. According to the document, "(in) any future reductions, our 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."[31] The Strategic Concept wording can be traced back to the five principles of NATO nuclear policy presented by U.S. Secretary Hillary Clinton in Tallinn in April 2010, which laid the groundwork for a basis for compromise amongst NATO members.[32] The wording resulted from the concerns of some NATO members, including Poland, about unilateral reductions of U.S. nuclear weapons in Europe and concerns about a disproportionally larger Russian arsenal of nuclear weapons, elements of which could be located near its borders.

[31] "Active Engagement, Modern Defence: Strategic Concept for the Defence and Security of the Members of the North Atlantic Treaty Organisation Adopted by Heads of State and Government at the NATO Summit in Lisbon 19–20 November 2010," par. 26, *op. cit*.

[32] O. Meier, "NATO Chief's Remark Highlights Policy Rift," *Arms Control Today*, May 2010, www.armscontrol.org/act/2010_05/NATO.

For Russia, the only option for redeployment so far highlighted is withdrawal of U.S. non--strategic nuclear weapons from Europe together with the elimination of related infrastructure that may facilitate their permanent return, including storage sites.[33]

Discussions on redeployments from the NATO perspective could take place within the NRC or be a part of bilateral U.S.–Russia negotiations on a reduction in the numbers of NSNW. For Russia, as withdrawal of U.S. weapons from Europe is a precondition to talks with NATO on steps taken by Russia, the initial phase at least should be pursued unilaterally by the U.S. and NATO.

Redeployment could apply to different parts of territory of the NATO members and Russia. For NATO, it could be consolidation of NSNW to fewer storage sites in Europe or withdrawal of U.S. NSNW to its territory. Russia may relocate its weapons to central storage sites beyond the Volga or beyond the Urals or away from the High North. Options that have been considered in the past include establishing a nuclear weapons-free zone in Central Europe. In more limited fashion, both sides can make pledges of not having plans, reasons, or intentions to base nuclear weapons closer than 1,000 km to the NATO–Russia border.

Format				Geographical coverage				Level of transparency		
US--Russia	NRC	Other		NATO Europe/ European part of Russia	NATO Europe/US territory/ whole territory of Russia	Other (limited area or global)		Confidential	Public	Other
	X			X	X			X	X	

Political/Security/Military/Practical Considerations

NATO member states would view Moscow's consent to redeploy Russian weapons as a completion of a political aim set in the Strategic Concept. However, it would be too costly for NATO allies to achieve the goal for the price Russia wants—removal of U.S. weapons from Europe and dismantlement of associated nuclear infrastructure. Moreover, more limited offers to Russia, such as consolidation of nuclear warheads in fewer storage sites, would pose severe political problems within the Alliance, as removal from one state, for example Germany, most likely would increase pressure on others, especially Belgium and the Netherlands. Politically, the best option for NATO given the current circumstances would be to reduce the number of non-strategic nuclear weapons in existing storage facilities in Europe.

In terms of security considerations, the impact is also not straightforward. Most of Russia's non-strategic nuclear weapons are intended to be delivered by aircraft (as gravity bombs or cruise missiles) or are air transportable. Their redeployment would practically not matter as they could be rapidly relocated or transported from one place to another. If non-strategic weapons were not relocated outside of the operational radius of relevant aircraft, they could return in a few hours flight time. Even if so, their transport would be a bit longer and would require some extra effort, such as air-to-air refuelling. This was the reason that in the Treaty on Conventional Forces in Europe (CFE), there was no limitation on the place of deployment of aircraft. Even if there would be appropriate political circumstances and will to allocate funds for rebasing, nothing seems to change in terms of strategic stability.

The security impact of relocations would, however, depend on the content of the deal. If Russia's redeployment would not require any NATO moves, it would be seen as strengthening the perception of NATO security. If it were to involve the withdrawal of weapons to the U.S. it could

[33] "U.S. tactical nuclear weapons must be withdrawn from Europe—Russian Defense Ministry," *The Voice of Russia*, 14 August 2013, http://voiceofrussia.com/news/2013_08_14/US-tactical-nuclear-weapons-must-be-withdrawn-from-Europe-Russian-Defense-Ministry-9568.

be seen as detrimental to the assurance and credibility portions of NATO's deterrence stance, as there are concerns that U.S. weapons after withdrawal might never return as it might be too escalatory during crises.

From a practical point of view, the consolidation of weapons to fewer sites in Europe or withdrawal to the U.S. could make handling the U.S. arsenal in Europe easier and less costly. It could, however, negatively impact the military/operational dimension of NATO's nuclear posture, as NATO would have fewer options for executing the nuclear mission.

Perhaps an optimal option for NATO members would be agreement with Russia on the relocation of nuclear capable units. Moving Russian non-strategic nuclear weapons to storage facilities away from NATO member territories does not change anything in the operational setup of Russian nuclear forces, which are not deployed. What seems more important is not where the weapons are located but where the nuclear capable units are sited. Their removal away from NATO borders would signal the lessening role of Russian nuclear forces against NATO. For NATO, it would be possible to give Russia a similar offer. There seems to be no deployed nuclear-certified aircraft at the Incirlik air base in Turkey, where nuclear weapons are located. Germany might be also interested in such a status as it would not require certifying the Eurofighter for a nuclear mission. However, such an option might be technically difficult as removal of all fighter aircraft from the airbases seems unlikely and it would be hard to verify whether particular aircraft stationed at the airbase have a nuclear delivery role.

For Russia, any agreement on redeployment of its own weapons would be extremely politically costly if NATO members did not meet Russia's precondition of the removal of weapons back to the U.S. Any movement from Russia would depend on a fundamental change in the political climate and relations with NATO.

Any unilateral relocation of Russian weapons would be seen as weakening Russia's deterrence posture. Most of the relocation options seem highly problematic for practical and military/operational reasons. However, for Russia it might be a security gain if relocation of easily transportable weapons farther into its own territory would lead to the removal of U.S. weapons from Europe.

The option that may be technically possible for Russia is the removal of nuclear weapons from Kaliningrad Oblast (assuming that nuclear warheads are there). For this purpose, NATO and Russia could agree to establish a 1,000 km nuclear storage facilities-free zone along the NATO–Russia border. However, such a zone most likely would have to include some exceptions. From a military operational point of view it would be impossible for Russia to remove weapons from any facilities associated with the Northern Fleet. Nuclear weapons are a considerable role for the Russian navy.

It would also be difficult for Russia to relocate central storage facilities beyond the Volga. Most Russian central storage facilities are located near Russia's western and eastern borders. There are not many storage facilities elsewhere for nuclear weapons to be relocated. Several facilities around the Urals are industrial complexes where warheads are disposed. Relocation beyond the Urals, from storage facilities on the western and eastern Russian borders is also out of the question for Russia as it would be perceived negatively by China as well as U.S. allies in East Asia such as Japan. The relocation of Russian weapons between the Volga and Urals would require the construction of new facilities.

Moving away from the NATO border, Russian nuclear capable units would also be difficult as Russian aircraft and short-range missiles also play a conventional role. To remove away nuclear-capable units, Russia would have to indicate first the types of non-strategic nuclear weapons it possesses.

Political dimension			Security perception			Military/ Operational Dimension			Practical implementation challenges		
A. RISKY (COSTLY)	B. NEUTRAL	C. ADVANTAGEOUS	A. WEAKENING	B. NEUTRAL	C. STRENGTHENING	A. NEGATIVE	B. NEUTRAL	C. POSITIVE	A. DIFFICULT	B. MEDIUM	C. EASY
R		N	N/R	N/R	N	N/R			N/R		

Effects/Added Value

The removal of nuclear weapons away from the NATO–Russia border is reversible. Still, even reversible options have confidence-building value, as in the case of non-targeting pledges or pledges of non-deployment of non-strategic nuclear weapons. Such a step would also signify a reduction in the role of nuclear weapons in Europe by establishing NSNW non-basing zones. It would be of significant confidence-building value for NATO. However, absent withdrawal of U.S. non-strategic weapons from Europe, any consolidation of NATO weapons on the European continent would not be seen as enhancing Russia's confidence.

Removal of NSNW farther from NATO–Russia borders most likely would be an element of arms-control measures involving reductions.

Russia's argument, however, is that the withdrawal of U.S. weapons from Europe is a precondition to any serious arms-control talks. Also, it is argued by many experts that if the U.S. had removed weapons from Europe it would prompt Russian steps. The argument goes that NATO's reluctance perpetuates the nuclear status quo in Europe, which is beneficial for Russia. Russia has no interest in any change, and as long as B-61s are based in Europe, Russia does not have to talk about its NSNW. If U.S. weapons were removed, Russia would feel strong pressure for concessions and steps related to its own arsenal.

The disbelief amongst some NATO countries in such a scenario stems from the fact that the list of Russian preconditions to negotiations on arms control on non-strategic nuclear weapons is long, and Russia could find many excuses to not engage in the process. It seems that in 2009, when there were some prospects for the removal of U.S. weapons from Europe, Russia deliberately extended the list of preconditions before it would talk about arms-control measures pertaining to its own arsenal.

Also, Russia only promised that after removal of U.S. weapons from Europe it would be ready only for talks. Its consent to relocate its weapons may require some further concessions from NATO in other fields in which there is existing asymmetry between NATO and Russia, for example missile defence. Russia's argument would be "if you want to talk to us about this asymmetry that concerns you, why do you not want to talk about other asymmetry that also concerns us." Without certainty that NATO unilateral steps would lead to concrete Russian actions, it is unlikely that NATO members would be ready to pursue them. Relocation of nuclear weapons poses a serious challenge as to what both sides could offer in exchange and whether it is possible to make any steps perceived as reciprocal—as a balanced measure that would incur similar costs on both sides.

If Russia, for example, agreed to relocate nuclear warheads 1,000 km away from NATO's borders (excluding weapons in storage facilities assigned to the Northern Fleet), NATO will be unable to offer anything similar in exchange. Most likely, there will not be an agreement to relocate U.S. weapons from Incirlik air base in Turkey, the closest NATO nuclear storage site to

Russian territory. It seems doubtful that Russia would perceive its own actions as reciprocal to reductions and relocations by NATO in the 1990s.

The removal of non-strategic nuclear weapons back to the U.S. in exchange for the removal of Russia's weapons, even if possible, most likely would not be perceived as symmetrical by at least some NATO members. NATO members will not be able to report something equivalent, as it would be easier for Russia to bring back these weapons. The re-basing options seem to include asymmetrical steps on the Russian side (in terms of NATO expectations for moving Russian weapons away from NATO–Russia borders, for which NATO might not be able to respond with re-basing of its own arsenal) or asymmetric NATO steps (if according to Russian wishes, the U.S. weapons and associated infrastructure were to be withdrawn to the U.S.).

Mutual confidence and predictability				Arms Control Policy				Reciprocity		
A. SIGNIFICANT	B. MODEST	C. NO CONTRIBUTION		A. CONDUCIVE	B. NEUTRAL	C. DETRIMENTAL		A. SYMMETRIC	B. ASSYMETRIC	C. NOT APPLICABLE
N	N/R	R		N		R		N/R	R/N	

Exchange of officers

Overview

Consideration of the exchange of military officers was advised in a non-paper from April 2011 signed by 10 NATO members.[34] In practice, such measure could take different forms, including assignment of NATO and Russian military officers to respective central storage facilities or to relevant institutional bodies responsible for nuclear planning and nuclear policies, such as a NATO Nuclear Planning Group meeting and relevant structures of the Russian General Staff. In theory, it could be pursued through the NRC or within the framework of bilateral U.S.–Russia cooperation.

Format				Geographical coverage				Level of transparency		
US--Russia	NRC	Other		NATO Europe/ European part of Russia	NATO Europe/US territory/ whole territory of Russia	Other (limited area or global)		Confidential	Public	Other
X	X				X			X		

Political/Security/Military/Practical Considerations

From political, security, military and practical perspectives, such exchanges under the current circumstances would be prohibitively costly for both NATO members and Russia.

Political dimension				Security perception				Military/ Operational Dimension				Practical implementation challenges		
A. RISKY (COSTLY)	B. NEUTRAL	C. ADVANTAGEOUS		A. WEAKENING	B. NEUTRAL	C. STRENGTHENING		A. NEGATIVE	B. NEUTRAL	C. POSITIVE		A. DIFFICULT	B. MEDIUM	C. EASY
N/R				N/R	N			N/R				N/R		

[34] "Non-Paper Submitted by Poland, Norway, Germany and the Netherlands on increasing transparency and confidence with regard to tactical nuclear weapons in Europe," *op. cit*.

Effects/Added Value

Agreement on such a measure would be a demonstration of a high degree of mutual trust and an ultimate confidence-building measure. It would be one of the last measures contemplated by both sides when thinking of mutual confidence-building steps. Also, if ever possible, most likely it would be the result of different arms-control steps. Both sides would perceive it as reciprocal.

Mutual confidence and predictability				Arms Control Policy				Reciprocity		
A. SIGNIFICANT	B. MODEST	C. NO CONTRIBUTION		A. CONDUCIVE	B. NEUTRAL	C. DETRIMENTAL		A. SYMMETRIC	B. ASSYMETRIC	C. NOT APPLICABLE
N/R				N		R		N/R		

Pledge not to modernise existing nuclear warheads or make new delivery vehicles nuclear-capable

Overview

A public non-modernisation pledge might take the form of parallel, unilateral U.S. and Russian declarations—if focused solely on nuclear warheads—or be undertaken as a joint NRC declaration—if it applied to warheads and delivery vehicles. It could apply to all NATO and Russian categories of NSNW, no matter where located.

Format				Geographical coverage				Level of transparency		
US--Russia	NRC	Other		NATO Europe/ European part of Russia	NATO Europe/US territory/ whole territory of Russia	Other (limited area or global)		Confidential	Public	Other
X	X	X			X	X			X	

Political/Security/Military/Practical Considerations

Such a step would de facto lead to "slow motion disarmament by default," if any life-extension programmes or refurbishment of stockpiles were treated as modernisation and if delivery vehicles were included (excluding regular maintenance of warheads that would not change any characteristics of the weapon itself). Absent similar disarmament steps from other nuclear weapons states, such a move would be highly politically risky for both Russia and the NATO members. Politically, it would satisfy only NATO countries not happy with the B-61 LEP and the necessity to take a decision to replace their dual-capable aircraft.

From a security perspective, it would be highly controversial within NATO, as for proponents of keeping NATO's nuclear posture it would seriously weaken deterrence and reassurance. The nuclear warheads and delivery capabilities presently in use would become obsolete and more difficult to handle for safety reasons. Russia would also see it as detrimental to its own security and military/operational aspects of its nuclear deterrence. Most likely, Russia would like to preserve the option to develop new nuclear warheads and delivery vehicles to carry them.

Political dimension			Security perception			Military/ Operational Dimension			Practical implementation challenges		
A. RISKY (COSTLY)	B. NEUTRAL	C. ADVANTAGEOUS	A. WEAKENING	B. NEUTRAL	C. STRENGTHENING	A. NEGATIVE	B. NEUTRAL	C. POSITIVE	A. DIFFICULT	B. MEDIUM	C. EASY
N/R			N/R			N/R			N/R		

Effects/Added Value

Such a pledge from Russia could be seen by NATO as strengthening predictability. However, without proper verification measures and given Russia's uncertain record with the PNIs, the added value might be questionable. The contribution to confidence-building would also be limited if the pledge is too ambiguous, leaving loopholes that might be exploited (for example, inclusion of new safety measures—desirable as such—that could be used as a pretext to add new characteristics to weapons).

Without an arms-control mechanism that would allow for verification, such a pledge would be of limited value. Because of that, it seems to be realistic only as part of a broader arms-control or disarmament agreement. A modernisation pledge might, however, make further nuclear reductions more difficult. Modernisation of nuclear delivery vehicles by making them more capable and more universal may decrease non-strategic nuclear weapons requirements, for example, by reducing the number of warheads/platforms allocated for a specific mission. In fact, without modernisation, requirements for the number of NSNW may even increase.

Whether such a measure would be perceived as symmetric for both NATO and Russia seems controversial. Russia might view it as giving more than it gets, especially if it does not get any concessions in other areas. Further, such a step seems to be realistic only in a drastically different political climate, so current considerations most likely would not apply.

Mutual confidence and predictability			Arms Control Policy			Reciprocity		
A. SIGNIFICANT	B. MODEST	C. NO CONTRIBUTION	A. CONDUCIVE	B. NEUTRAL	C. DETRIMENTAL	A. SYMMETRIC	B. ASSYMETRIC	C. NOT APPLICABLE
	N/R				N/R	N	R	

Appendix (tables)

	Format			Geographical coverage			Level of transparency		
	U.S.–Russia	NRC	Other	NATO Europe/European part of Russia	NATO Europe/U.S. territory/whole Russia territory	Other (limited area or global)	Confidential	Public	Other
Regular Joint Seminars on Nuclear Doctrines/Policies		X			X	X	X	X	X
Nuclear Accident/Incident Response Exercises	X	X	X		X	X	X	X	
Co-Development of Non-Intrusive Verification Techniques	X					X	X		
Info Exc.—Historic Numbers	X				X		X		
Info Exc.—Current Numbers of Warheads	X				X		X		
Reaffirmation of Nuclear Three No's			X			X		X	
Reaffirmation of PNIs	X				X	X		X	
Transparent Modernization Pledge	X	X	X		X	X	X		
Inf. Exc.—Inactive Storage Facilities	R	N		N	R		X		
Movement Notifications		X			X		X		
Removal of NSNW Away from NATO–Russia borders		X		X	X		X	X	
Exchange of Officers	X	X			X		X		
No Modernization Pledge	X	X	X		X	X		X	

		Political dimension			Security perception			Military/ Operational Dimension			Practical implementation challenges		
		A. RISKY (COSTLY)	B. NEUTRAL	C. ADVANTAGEOUS	A. WEAKENING	B. NEUTRAL	C. STRENGTHENING	A. NEGATIVE	B. NEUTRAL	C. POSITIVE	A. DIFFICULT	B. MEDIUM	C. EASY
	Regular Joint Seminars on Nuclear Doctrines/Policies	R	R	N		N/R	N		N/R				N/R
	Nuclear Accident/Incident Response Exercises	R	R	N		N/R			N/R	N/R		N/R	N/R
	Co-Development of Non-Intrusive Verification Techniques	R		N		N/R			N/R		R	N/R	N
	Info Exc.—Historic Numbers	R		N	R	R	N		N/R			N/R	
	Info Exc.—Current Numbers of Warheads	R		N	R	R	N		N/R			N/R	
	Reaffirmation of Nuclear Three No's	N	R	R	N	R	R		N/R				N/R
	Reaffirmation of PNIs	R		N	R		N	R	N		R		N
	Transparent Modernization Pledge	R		N	R		N	N/R	N			N/R	
	Inf. Exc.—Inactive Storage Facilities	N/R			R	N	N	N/ R	N/R		N /R	N/R	
	Movement Notifications	N/R			R		N	N/R			N/R		
	Removal of NSNW Away from NATO–Russia borders	R		N	N/R	N/R	N	N/R			N/R		
	Exchange of Officers	N/R			N/R	N		N/R			N/R		
	No Modernization Pledge	N/R			N/R			N/R			N/R		

	Mutual confidence and predictability			Arms Control Policy			Reciprocity		
	A. SIGNIFICANT	B. MODEST	C. NO CONTRIBUTION	A. CONDUCIVE	B. NEUTRAL	C. DETRIMENTAL	A. SYMMETRIC	B. ASSYMETRIC	C. Not Applicable
Regular Joint Seminars on Nuclear Doctrines/Policies		N/R			N/R				N/R
Nuclear Accident/Incident Response Exercises		N/R	R		N/R		N/R		
Co-Development of Non-Intrusive Verification Techniques		N/R	R	N	R	R			N/R
Info Exc.—Historic Numbers	N	N/R		N	R	R	N	R	
Info Exc.—Current Numbers of Warheads	N	N/R		N	R	R	N	R	
Reaffirmation of Nuclear Three No's	R	N/R	N		N/R			N	R
Reaffirmation of PNIs	N	N	R	N		R	N	R	
Transparent Modernization Pledge	N	R	R	N		R	N	R	
Inf. Exc.—Inactive Storage Facilities	N	N	R	N		R	N	R	
Movement Notifications	N		R	N		R	N	R	
Removal of NSNW Away from NATO–Russia borders	N	N/R	R	N		R	N/R	R/N	
Exchange of Officers	N/R			N		R	N/R		
No Modernization Pledge		N/R				N/R	N	R	

X – denotes the experts' assessment of the positions most likely to be taken by both NATO and Russia (joint approach);
R – denotes the experts' assessment of the likely position of Russia;
N – denotes the experts' assessment of the likely position of NATO.

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The Polish Institute of International Affairs (PISM) is a leading Central European think tank that positions itself between the world of politics and independent analysis. PISM provides analytical support to decision-makers, initiates public debate and disseminates expert knowledge about contemporary international relations.
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On 20–21 February 2014 in Warsaw, the Polish Institute of International Affairs (PISM) in cooperation with the Institute of World Economy and International Relations of the Russian Academy of Sciences (IMEMO RAN) organised the workshop: Transparency and Confidence-Building Measures Related to Non-Strategic Nuclear Weapons in Europe: Cost-Benefit Matrix.
The workshop sought to advance the informal dialogue on information-sharing and transparency and confidence-building measures (TCBMs) regarding non-strategic nuclear weapons (NSNW) in Europe. The idea behind the workshop was based on the concept of a Joint TCBM Cost-Benefit Matrix, outlined in the final report of the 2013 Warsaw Workshop: Prospects for Information-Sharing and Confidence-Building on Non-Strategic Nuclear Weapons in Europe.
Specific options for adopting transparency and confidence-building measures were analysed by 22 experts from NATO countries and Russia. The objective was to assess what NATO member states and Russia could gain from applying such measures and what costs could be attached to their introduction. This exercise aimed at better understanding existing differences, identifying areas of potential agreement as well as obstacles, and developing relevant policy recommendations.

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