



Brainstorming Roundtable on

**“Moving Towards a Nuclear Weapon
Free World: Conditions for Nuclear
Stability at Low Numbers”**

This report presents the working papers and conclusions of the brainstorming roundtable **“Moving Towards a Nuclear Weapon Free World: Conditions for Nuclear Stability at Low Numbers,”** which took place in Washington, DC at the Italian Embassy on February 13th, 2012. The roundtable was organized by the Italian Embassy in collaboration with the Landau Network – Centro Volta (LNCV) of Como, Italy, and the Nuclear Threat Initiative (NTI) in Washington DC, with the support of the Unit of Policy Planning (UPP) of the Italian Ministry of Foreign Affairs.

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Preface by the Italian Foreign Minister

Hon. Giulio Terzi

I am pleased to present the proceedings of the Brainstorming Roundtable on “Moving Towards a Nuclear weapon Free World: Conditions for Nuclear Stability at Low Numbers”, held at the Embassy of Italy in Washington, D.C., on February 13. The initiative is particularly timely and apt, especially in view of forthcoming decisions by the Atlantic Alliance on the Defense and Deterrence Posture Review (DDPR).

Italy continues to fully support the vision that President Obama presented in his landmark Prague speech on April 5, 2009, on a nuclear free world. Various steps have already been taken to help make this vision become real: the New START Treaty, which will enable a significant reduction of Washington and Moscow’s strategic arsenals; the US Nuclear Posture Review, which entails the reduction of the role of nuclear weapons in national security policy; the Nuclear Security Summit, which laid the grounds to effectively counter the threat of nuclear terrorism; the NPT Review Conference in May 2010 and the perspective of a conference on a WMD-free zone in the Middle East, possibly later this year; the new NATO Strategic Concept

and the European Phased Adaptive Approach, which represents another variable in the deterrence equation.

More must be done, however. The first step will be the finalization of the Defense and Deterrence Posture Review (DDPR), which should be approved at the next NATO Summit in Chicago. This is why I believe that the Roundtable on February 13 was helpful to uphold the momentum. The extremely high profile of the experts present, and the concrete measures proposed, undoubtedly offered food for thought to help find tangible solutions for issues which are yet unresolved.

Introductory Remarks

Ambassador Claudio Bisogniero

Ambassador of Italy to the U.S.

Excellencies, dear colleagues,

I am honored to open this Roundtable. Let me start with my sincerest thanks to Joan Rohlfing and Deborah Rosenblum, respectively President and Chief Operating Officer, and Executive Vice President of the Nuclear Threat Initiative (NTI), and Prof. Maurizio Martellini from Landau Network - Centro Volta. Their joint efforts made this meeting - which we wanted to keep small, but highly qualified - possible. I am also particularly pleased to see so many distinguished American colleagues, among whom I would like to note The Hon. Ellen Tauscher, Special Envoy for Strategic Stability and Missile Defense at the State Department - my heartfelt gratitude for your precious time.

This event is in follow up to an earlier seminar on “Enhancing responsibilities from States towards the Nuclear Non Proliferation Treaty” that we held here in April 2010, on the margins of the Nuclear Security Summit. I intend to continue

this process initiated by my predecessor, Amb. Giulio Terzi, who is now Italian Foreign Minister.

The issue at stake here is of crucial importance. Since the seminal op-ed by Secretaries Shultz, Perry, Kissinger, and Senator Nunn in January 2007, the goal of a world free of nuclear weapons has become more realistic. Their main merit probably is their ability to propose concrete steps to accomplish such a bold vision.

But to make things possible we need leaders to act. From the very beginning of his mandate, President Obama has shown the way forward, in a vision clearly expressed in his Prague speech in April 2009. In the last three years various steps have been taken in order to attain tangible results.

Let me recall them briefly.

The New START Treaty; the US Nuclear Posture Review; the Nuclear Security Summit; the NPT Review Conference in May 2010 and the perspective of a conference on a WMD-free zone in the Middle East, possibly later this year. And again, the new NATO Strategic Concept and the Defense and Deterrence Posture Review, currently under discussion.

On further steps, notably the finalization of the D DPR, I am confident that Amb. Bylica will give us the latest update.

Italy has been actively involved in the multilateral aspects of this process. We continue to be fully convinced that the NPT, based on the three mutually reinforcing pillars of non-proliferation, disarmament and the peaceful uses of nuclear energy, represents a unique and irreplaceable framework for maintaining and strengthening international peace, security and stability. Italy has consistently acted in favor of a clear and fully recognized balance between the inalienable right to nuclear energy for peaceful purposes (Article IV of NPT) and commitment to nuclear disarmament. During the G8 Italian Presidency in 2009, for the first time the principle of a nuclear free world was clearly stated in a G8 Statement on disarmament and non proliferation.

But to return briefly to our meeting today - I believe we should try to be as operational and focused as possible. In our conclusions we could compile a list of possible recommendations stemming from the debate, and Prof. Martellini has generously volunteered to send all the participants a brief summary of our debate and suggestions.

I now turn to Deborah

Rosenblum and invite her to take the floor before our key note speakers: The Hon. Ellen Tauscher and Amb. Carlo Trezza, who will intervene in this opening session.

Thank you.

SUMMARY OF CHAIRMEN’S CONCLUSIONS

The objective of the February 13th roundtable on “Moving towards a Nuclear Free World: Conditions for Nuclear Stability at Low Numbers” was to promote a serious debate among experts and senior officials on how to move to a world with lower numbers of nuclear weapons on the path toward a world free of nuclear weapons. The roundtable began with a discussion on how nuclear doctrines, force structures, and alert levels can be adapted to support the process of moving towards stability at much lower numbers of nuclear weapons, and ultimately to a world free of nuclear weapons and then moved to a discussion on how such a process might unfold.

There were a number of themes that were discussed and that will be important as states move to lower numbers of nuclear weapons, including, the process for multinational reductions, strengthening nonproliferation efforts, enhancing transparency and accountability, reviewing targeting requirements, implementing a fissile material cutoff treaty and updating declaratory policies. One concern expressed by a number of participants was that focusing too much on stability at lower numbers risked obfuscating the ultimate goal of a world without nuclear weapons and therefore a world with fewer

numbers must be viewed as only a transitory period.

The summary below offers an overview of the recommendations and conclusions of the group. This is not a consensus document nor does it reflect the individual views of any one participant.

- i. **Process for reductions.** Participants generally agreed that given the combined arsenals of the U.S. and Russia account for more than 90 percent of the world's nuclear weapons both states will need to continue to lead the way in terms of reducing arsenals, including, implementing stringent verification measures.

All states with nuclear weapons will need to eventually join the process, which raised questions relating to whether the U.S. and Russia would eventually make their reductions contingent upon actions by the other nuclear weapon states. Such a process would place more urgency on the need for transparency and could lead to a possible international transparency arrangement. However, there was no clear consensus among participants on what this process would look like, though it was

generally agreed that the other NPT – recognized NWS – China, France and the United Kingdom would need to join the U.S. and Russia in the next round of reductions. There was also discussion as to whether the necessary agreements would need to be legally or politically binding. Participants recognized that a legally binding treaty could be difficult in the near term, given the political and budgetary difficulties many governments are facing. The view was expressed that nuclear disarmament commitments and their verification measures should preferably be legally binding though several nuclear capable countries would have difficulties in subscribing to nuclear commitments of a political nature.

Participants also recognized that the success of such a process would require cooperation with all states, including non-nuclear weapon states, to work together on accountability and strengthening the nonproliferation regime.

- ii. **Verification and transparency.** The five nuclear weapon states recognized under the NPT have committed to reduce and eventually eliminate their

arsenals, and participants agreed this process must begin with, as well as in some cases continue, enhanced transparency and accountability. Baseline declarations of the size of each state's arsenal could be an appropriate first step. It was generally agreed that an exact number of warheads would not be required, and that states could instead agree to an overall ceiling on the number of warheads. This would enhance confidence that other states are not building up their arsenals. Such a process would resemble early actions between the U.S. and the Soviet Union during the Strategic Arms Limitation Talks.

In addition to arsenal declarations, states will need to be more transparent with regard to fissile material holdings. Participants agreed that the best way to reduce or limit the number and role of nuclear weapons is to focus on the materials required for production. Given that prospects for a Fissile Material Cut-off Treaty remain dim, one expert suggested that the U.S. and Russia resume exchanges between nuclear laboratories in order to increase transparency on production capabilities and build confidence for longterm questions of reconstitution.

Targeting policies. Participants discussed the need for states to review their targeting requirements to more accurately reflect today's security environment. It was generally agreed that the targeting policies and military requirements for determining the size and shape of the U.S. nuclear arsenal are outdated, and largely hidden from public view. Participants discussed whether a review of such requirements could yield reductions, even if no changes were made to wider nuclear doctrines or policies. For instance, one participant pointed out that Russian ICBM silos are still included in U.S. target sets, despite the fact that such silos would presumably be empty if Russia launched a first strike attack. Maintaining weapons for such targets unnecessarily raises the number of weapons that military planners believe the U.S. needs and a review of such policies would likely lead to reductions.

While the moral implications of shifting from a counterforce to countervalue doctrine were discussed at length, one participant pointed out that both targeting strategies would cause massive damage and that neither approach is inherently moral.

iii. **Declaratory policies.** In order to reduce the role of nuclear weapons in a state's overall national security strategy, participants discussed the merits of establishing a policy of "No First Use," or simply declaring that the fundamental purpose of nuclear weapons is to deter the use of nuclear weapons. While such doctrines can reduce the number of nuclear weapons a state might determine it needs, participants acknowledged that adding caveats, as in the 2010 Nuclear Posture Review, does not necessarily translate into arsenal reductions. Such policies do, however, clarify the purpose of nuclear weapons in a state's overall security strategy, which participants agreed enhances overall strategic stability. A number of participants commented that the strengthened U.S. negative security Assurances announced in April 2010 were a step in the right direction and that such an approach should be adopted by the Alliance as a whole.

iv. **NATO's Nuclear Posture.** The upcoming NATO summit in Chicago and the ongoing Deterrence and Defense Posture Review (DDPR) offers an opportunity for the alliance to examine its nuclear policy,

including the possibility of declaring that the fundamental purpose of nuclear weapons is to deter the use of nuclear weapons. Participants generally agreed that such a declaration would be a good first step in better aligning the alliance's nuclear posture with 21st century security threats. There was also discussion on the role of NATO today and what an appropriate mix of nuclear and conventional weapons would entail given questions relating to the relevance of nuclear deterrence to addressing today's threats. Russian-NATO relations will be increasingly important going forward for progress on key issues such as practical cooperation on missile defense and further reductions of tactical nuclear weapons.

Agenda

Outline

The objective of this Roundtable Discussion is to promote a serious debate among experts and senior officials on how to move to a world with lower numbers of nuclear weapons on the path toward a world free of nuclear weapons. The discussion has been designed in the context of the ongoing P5 discussions, the results of the 2010 NPT Review Conference, and taking into account the NATO New Strategic Concept and the work underway within NATO for the review of the Alliance's Defense and Deterrence Posture, in view of the Chicago Summit in May 2012.

The goal of further substantial reductions of nuclear forces in all states that possess them is one of the steps outlined by Secretaries Shultz, Perry, Kissinger, and Senator Nunn in their *Wall Street Journal* op-ed of January 4th, 2007. In their subsequent op-ed of 2008 they stated, "There should also be an agreement to undertake further substantial reductions in U.S. and Russian nuclear forces beyond those recorded in the U.S.-Russia Strategic Offensive Reductions Treaty. As the reductions proceed, other nuclear nations would become involved."

During the discussion participants will address the following key issues:

- How nuclear doctrines can be adapted to support a move to stability at much lower numbers of nuclear weapons – including, whether the U.S. and Russia would need to make significant shifts to their doctrines;
- What other changes might be introduced alongside such a move – including, measures to maintain or enhance survivability, strategic defense, reduced alert levels, and increased transparency; and
- What is the process for getting to stability at lower numbers – including, the combination of changes in national doctrine and posture, bilateral and multilateral engagement between nuclear armed states, and agreements between nuclear and non-nuclear states.

Light refreshment

12:30 pm – 1:15 pm

Opening introduction

1:15 pm – 2:30 pm

*Chairs with opening remarks: **Ambassador Claudio Bisogniero**, Italian Ambassador in Washington and **Deborah G. Rosenblum**, Executive Vice President of NTI*

***Ellen Tauscher**, Special Envoy for Strategic Stability and Missile Defense*

***Ambassador Carlo Trezza**, UNSG Advisory Board for Disarmament Matters*

Roundtable discussion

SESSION 1

2:30 pm – 4:00 pm

How nuclear doctrines, force structures, and alert levels can be adapted to support the process of moving towards nuclear stability at lower numbers, and ultimately to a world free of nuclear weapons

Chair with remarks: Deborah G. Rosenblum, NTI

Presentations by: Ambassador Jacek Bylica, NATO; Malcolm Chalmers, Royal United Services Institute; Scott Sagan, CISAC.

Roundtable discussion

SESSION 2

4:00 pm – 5:30 pm

What is the process for getting to a world with much lower numbers of nuclear weapons?

Chair with remarks: Maurizio Martellini, LNCV and University Insubria, Como, Italy

Presentations by: *James Acton*, Carnegie Endowment for International Peace; *Ambassador Thomas Graham*, Former Special Representative of the President for Arms Control, Nonproliferation and Disarmament; *Harald Mueller*, Peace Research Institute Frankfurt, Germany; *Randy Rydell*, United Nations Office for Disarmament Affairs.

Roundtable discussion

Conclusions

5:30 pm – 5:45 pm

By *Maurizio Martellini* and *Deborah G. Rosenblum*
At the presence of Ambassador Claudio Bisogniero

Participants' List

- 1) **James Acton**, Senior Associate, Nuclear Policy Program, Carnegie Endowment for International Peace, Washington DC, US
- 2) **Giorgio Aliberti**, Head of the Political Affairs Office, Embassy of Italy, Washington DC, US
- 3) **Steven P. Andreasen**, Consultant, Nuclear Threat Initiative, Washington DC, US
- 4) **Ambassador Claudio Bisogniero**, Italian Ambassador in Washington DC, US
- 5) **Ambassador Jacek Bylica**, Head, WMD Non Proliferation Center, Emerging Security Challenges Division, NATO HQs, Brussels, Belgium
- 6) **Malcolm Chalmers**, Director, UK Defence Policy Studies, Royal United Services Institute, London, UK
- 7) **Deepti Choubey**, Senior Director for Nuclear Security and Biosecurity, Nuclear Threat Initiative (NTI), Washington DC, US
- 8) **William Colglazier**, Science & Technology Adviser to the Secretary of State, US Department of State, Washington DC, US

- 9) **Fanny Consolazio**, Project Officer, Landau Network-Centro Volta, Como, Italy
- 10) **Ambassador Thomas Graham, Jr.**, Former Special Representative of the President for Arms Control, Nonproliferation, and Disarmament, Washington DC, US
- 11) **Elzbieta Gryzio**, Counselor, Polish Embassy in Washington DC, US
- 12) **Kelsey Hartigan**, Program Associate, International Program, Nuclear Threat Initiative (NTI), Washington DC, US
- 13) **Amb. Bonnie Jenkins**, Coordinator for Threat Reduction Programs, Bureau of International Security and Nonproliferation (ISN/TR), US Department of State, Washington DC, US
- 14) **Catherine Kelleher**, College Park Professor, University of Maryland, College Park, US
- 15) **Daryl Kimball**, Executive Director, Arms Control Association (ACA), Washington DC, US
- 16) **Carol Kuntz**, Center for Strategic and International Studies (CSIS), Washington DC, US
- 17) **Maurizio Martellini**, Secretary General, Landau Network-Centro Volta, Como, Italy and Professor of

- Physics, University of Insubria, Como, Italy
- 18) **Harald Mueller**, Executive Director, Peace Research Institute, Frankfurt, Germany
 - 19) **Ambassador Steve Pifer**, Director, Brookings Arms Control Initiative, Washington DC, US
 - 20) **Andrew Reynolds**, Deputy Science & Technology Adviser to the Secretary of State, US Department of State, Washington DC, US
 - 21) **Joan Rohlifing**, President & Chief Operating Officer, Nuclear Threat Initiative (NTI), Washington DC, US
 - 22) **Deborah G. Rosenblum**, Executive Vice President, Nuclear Threat Initiative (NTI), Washington DC, US
 - 23) **Randy Rydell**, Senior Political Affairs Officer, United Nations Office for Disarmament Affairs, New York, US
 - 24) **Scott Sagan**, Professor, Stanford University, & Senior Fellow, Center for International Security and Cooperation (CISAC), Stanford, US
 - 25) **Sharon Squassoni**, Senior Fellow and Director, Proliferation Prevention Program, Center for Strategic and International Studies (CSIS), Washington DC, US
 - 26) **Ellen Tauscher**, Special Envoy for Strategic Stability and Missile Defense, Washington DC, US

- 27) **Ambassador Carlo Trezza**, UNSG Advisory Board for
Disarmament Matters, Rome, Italy
- 28) **Isabelle Williams**, Senior Program Officer, Nuclear
Threat Initiative, Washington DC, US

Opening Remarks

Deborah Rosenblum

Executive Vice President
Nuclear Threat Initiative (NTI)

- NTI is very pleased to be part of today's event and I would like to thank – Landau Network-Centro Volta, the Italian Foreign Ministry, Ambassador Claudio Bisogniero and the Italian Embassy for their role in convening this meeting.
- We would also like to express our thanks to the Italian government for their engagement and leadership on this important issue. We have had the pleasure of working with the government over several years – including co-sponsoring a major international conference in 2009 with former Foreign Minister Frattini.
- For the past 5 years NTI has been the Secretariat for the Nuclear Security Project – the effort led by Secretaries Shultz, Perry, Kissinger, and Senator Nunn - focused on promoting dialogue and action within the U.S. and internationally on the vision of a world free of nuclear weapons and the steps to reduce nuclear dangers as laid out in their series of *Wall Street Journal* op-ed's.

- The four recognized in their important 2007 op-ed that without the bold vision of a world free of nuclear weapons, the necessary steps to reduce nuclear dangers will not be perceived as “fair or urgent.” But without the steps, the vision will not be perceived as realistic or possible.
- One of the steps laid out by the 4 is for “further substantial reductions of nuclear forces in all states that possess them.”
- This step and the vision of a world free of nuclear weapons is shared by many governments around the world, including, the United States – laid out in President Obama’s famous Prague speech. We are very grateful to have Ellen Tauscher here today to tell us how the U.S. is taking important steps to move us closer to this shared vision.
- A world with fewer nuclear weapons and a decreased reliance on such weapons would be a safer world with less proliferation concerns and a lower risk of accidental or intentional use of a nuclear weapon.
- However, moving to such a world and ensuring stability in such a world raises a number of important questions for states that we look forward to discussing in our sessions today. These include:

- How should we conceptualize the objective of moving to a world with fewer nuclear weapons?
 - What are the processes to reach such a world?
And,
 - How will political and wider strategic factors shape the nature of a world with fewer nuclear weapons?

- As part of NTI's Nuclear Security Project we have been working with numerous partners around the world – some of whom I am very pleased can be here with us today.

- Our partners – both security and defense institutes as well as regional leadership networks - play an important role in the NSP by: stimulating dialogue and action within their circles of influence on the urgent dangers of today's nuclear threat; building on the political momentum from the *Wall Street Journal* op-eds; and filling analytic gaps on key issues - including questions relating to stability at low numbers.

- Thank you to everyone for coming here today and I look forward to our discussion.

Opening Remarks

Ellen O. Tauscher

Special Envoy for Strategic Stability and Missile Defense

Thank you for inviting me in my new capacity as Special Envoy. I want to thank LNCV for organizing today's event and for its partners, including NTI and the Italian Ministry of Foreign Affairs. It's good to see so many friends here. When I was in politics, you are what political consultants would call "my base."

With the final year of President Obama's first term well-underway, we can look back with pride on what we have accomplished. We have worked very hard to take some of the concrete steps that President Obama said were necessary for moving toward the "peace and security of a world without nuclear weapons."

I do not need to go through our accomplishments in great detail, but I want to touch on some of the highlights.

We negotiated the New START Treaty, which the United States and Russia have been implementing successfully for more than a year. We revised and updated our Nuclear Posture Review to reflect the changed security environment, including acknowledging that large nuclear arsenals offer little against threats like suicidal terrorists.

We hosted the first-ever Nuclear Security Summit in Washington, and our allies in Seoul will host a second summit next month. We led a successful NPT Review Conference in 2010. And we united the world in implementing the toughest sanctions to date on the Iranian regime, giving it a clear choice between abiding by its international commitments or increasing its isolation.

Finally, we are standing up a missile defense architecture in Europe that protects all of NATO, not just some of it. This Administration is dedicated to developing and deploying effective missile defenses. The European Phased Adaptive Approach, or EPAA, provides an effective and timely response to the existing and evolving missile threats that NATO faces.

These missile threats are shared by Russia, which is why we are seeking to cooperate with Russia on missile defense. We are looking to transform missile defense from a source of contention to one of cooperation. That would go a long way toward enhancing strategic stability.

I want to talk a bit more on achieving stability at lower levels; after all, that is the reason we are here today.

Let me start by acknowledging the obvious, which is that the conditions for stability at low numbers of weapons are not yet well understood or agreed. If they were, this session would be unnecessary.

Enhancing stability as nuclear forces decrease will be a step-by-step process—just like the reduction process. It will be a learning process that will require us to consider new concepts and ideas to help assure that security and stability are maintained during the entire process of nuclear disarmament, and afterward.

A fundamental condition for continuing the reductions process to lower levels while maintaining stability is that other

countries cannot be building up.

Disarmament and nonproliferation are two sides of the same coin. Progress on disarmament depends on a robust and reliable nuclear nonproliferation regime. Countries with nuclear weapons will be reluctant to disarm so long as they face the prospect that other states may acquire such weapons or seek an advantage in such arms.

At the same time, countries might pursue nuclear weapons because their neighbors or others have them or obtain them. It will be difficult to make significant progress on nonproliferation without continued progress on disarmament.

Conversely, success in disarmament, such as the negotiation and ratification of the New START Treaty, helps strengthen the nonproliferation regime.

Nonproliferation, in turn, helps create the security conditions needed to make further progress on reducing the roles and numbers of nuclear weapons in states already possessing them.

The bottom line is that the realization of a world without nuclear weapons or even a world with fewer numbers of nuclear weapons is going to require the cooperation and work of all countries, not just those with nuclear weapons. And, especially not just the United States and Russia.

All states must work together to put nuclear proliferators out of business. We need all states to work together to demand accountability to make sure everyone is living up to their international commitments and obligations.

We need all states to work together to ensure nuclear materials and technologies are safe and secure from misuse and theft. We need all states to work together to ensure that their territories are not hubs or havens for illicit activities or transactions.

That said, the five NPT recognized nuclear-weapons states have important responsibilities to progress to lower levels and eventually elimination. For example, increasing transparency and accountability.

Such commitments are reflected in the Action Plan adopted by consensus among NPT Parties at their 2010 Review Conference.

Last June, I attended a meeting of the five NPT-recognized nuclear-weapons states in Paris. This event was a continuation of one started in London on issues related to nuclear weapons verification, transparency, and confidence-building measures. It included discussions about reporting on our nuclear weapons policies and activities.

Such transparency is essential to lay the groundwork for an eventual expansion of the process of nuclear reductions to include states other than the United States and Russia. We are hosting the next P-5 Conference in Washington this June.

Meanwhile, we are committed to pursuing deeper nuclear arms reductions at home and abroad. As we implement New START, we are preparing for further nuclear reduction negotiations with Russia.

Under the President's direction, the U.S. Government is reviewing our nuclear requirements. The Department of Defense and other agencies will consider what forces the United States needs to maintain strategic stability and deterrence, and evaluate potential changes in targeting requirements and alert postures.

In addition to our internal review, our approach to the next nuclear reductions agreement will be informed by the ongoing NATO Deterrence and Defense Posture Review.

The primary task of the NATO posture review is ensuring that NATO has the "appropriate mix" of conventional, nuclear, and missile defense capabilities necessary to respond to 21st century threats. We are not making any decisions unilaterally. As Secretary Clinton has said, as long as nuclear weapons exist, NATO will remain a nuclear alliance. This is an issue that allies must decide together, by consensus.

We also have made clear that reductions in nonstrategic nuclear weapons can only occur in the context of reciprocal steps by Russia. Our overall objective with Russia is to seek future reductions in all categories of nuclear weapons: strategic

and nonstrategic, deployed and non-deployed.

As I said earlier, we are seeking to establish a political framework with Russia that would open the way for practical cooperation on missile defense. The Cold War has been over for more than 20 years. Our missile defense systems are not directed against Russia.

Yet, we cannot agree to Russia's proposal for legally binding restrictions on missile defenses. We will not limit our ability to defend ourselves and our Allies. That is the wrong way to go.

Our view is that having Russia cooperating on missile defenses is going to give it greater confidence and more enduring assurances about our missile defense capabilities and intentions.

As the United States and Russia decrease their offensive systems and, if all goes well, work together on defensive systems, it will be increasingly important to bring into force multilateral nuclear control measures.

One the most important is the CTBT. It is central to diminishing reliance on nuclear weapons, reducing nuclear competition, and achieving nuclear disarmament. We can focus more on this topic during our discussion, but suffice it to say that much has changed since CTBT was defeated on the Senate floor in 1999.

It is this Administration's responsibility to educate Senators about what those changes are and why they matter. Most importantly, we have much stronger cases to make on both verification and stockpile stewardship than we did 13 years ago.

Some may find this contradictory, but stockpile stewardship and a modern complex is essential to moving toward lower numbers of nuclear weapons.

With a high quality stockpile stewardship program and a modern nuclear enterprise, our hedge can be placed in our people, technologies, and infrastructure instead of large numbers of weapons.

Of course, confidence and trust would depend on transparency into nuclear complexes to assure others that no secret buildup is happening. That increased transparency would need to be reciprocated.

In the alphabet soup of steps, we also need the FMCT. Keeping stability at low numbers of nuclear weapons requires a legal ban on the production of fissile materials for use in nuclear weapons.

Some countries, including the United States, have declared a moratoria on such production, while others have not. Some countries, again including the United States, have reduced their military stocks of fissile material, while others continue to produce more. That is not an environment conducive to stability.

The United States shares the international community's frustration with the impasse in the Conference on Disarmament that has prevented negotiation of a Fissile Material Cutoff Treaty.

That is why we are working together with our P5 partners, and other relevant states, to chart a course forward. To be relevant, an FMCT must include all states not currently bound by the NPT to forswear production of fissile material for nuclear weapons.

Progress on all of these steps—strengthened nonproliferation, deeper U.S.-Russia reductions, lessened reliance on nuclear weapons, missile defense cooperation, transparency and accountability, the CTBT and FMCT—can help move us toward Mutual Assured Stability.

This is a term that I have used before, but like stability at lower levels, needs more thought to implement.

Mutual Assured Stability would be a new approach to improving and maintaining stability. It would not rest on the threat or ability to obliterate another. It would create incentives for improving cooperation and avoiding competition and conflict. Mutual Assured Stability would be based on mutual interest, respect, and peaceful cooperation.

While differences would remain, states would share an overriding interest in peace and stability that is underpinned by arms limitations, both nuclear and conventional, other confidence-building measures, and expanded political, economic, and military cooperation.

As we transition away from Mutual Assured Destruction, we will need to develop incentives to refrain from precipitate actions, and pursue cooperative solutions to international problems.

One can envision a trend away from postures that emphasize acting first or worrying about “use or lose,” to postures that stress survivability and increased time for decision-making.

An important component of stability is to provide maximum predictability and transparency regarding our respective plans and intentions.

Achieving Mutual Assured Stability will not happen overnight, but could be promoted over time by confidence-building measures.

I hope that gives you a sense of where we are and the challenges that are ahead of us.

I look forward to our discussion and I will be more than happy to entertain any questions.

Opening Remarks

Amb. Carlo Trezza

UNSG Advisory Board for Disarmament Matters

Arms control, disarmament and non-proliferation, in particular in the nuclear field, are part of Nato doctrine and will probably be reviewed at the Nato Chicago Summit in April 2012. Progress in this field would be desirable.

In addition to the question of the “substrategic” nuclear weapons, two issues, Negative security assurances (NSAs) and a Fissile Material Cut off Treaty (FMCT) could be addressed.

- NSAs are the assurances given by nuclear weapons states not to use nuclear weapons against countries which have renounced to such weapons.

-FMCT is a Treaty to ban the production of fissile material for nuclear weapons.

The two concepts are complementary. The end result of NSAs is the reduction in the number of potential targets for nuclear warheads. The end result of an FMCT would be the establishment of a “ceiling” to the number of those warheads.

Nato countries have always been supportive of an FMCT treaty. Like all nuclear disarmament treaties, FMCT should be legally binding and verifiable.

It would be difficult to conceive that nuclear weapons states would renounce weapons fissile material production without the endorsement of their respective legislative bodies.

On NSAs Nato countries are more prudent. However all NPT nuclear weapons states are legally committed to security assurances by a Security Council resolution of 1995 and by the relevant protocols to the treaties establishing nuclear weapons-free zones.

Through its “strengthened assurances” approved in 2010, the US introduced a more flexible approach to NSAs. The US will not to use *and not threaten to use* nuclear weapons against NPT countries in compliance with the Treaty. Allies of a nuclear weapons state will no longer be excluded as NSA recipients. If attacked with conventional weapons, or with WMD other than nuclear weapons (chemical/biological), the US would react with a “devastating conventional military response”. The United States will continue to strengthen conventional capabilities (a step toward the concept of conventional deterrence?) and reduce the role of nuclear weapons in deterring non-nuclear attacks, “with the objective of making deterrence of nuclear attack the *sole purpose* of U.S.

nuclear weapons”: Altogether a significant evolution from previous US positions.

Since the supreme guarantee of the security of the Nato Allies is provided primarily by the strategic forces of the United States, the new US doctrine is “de facto” already applicable to NATO. The traditional Alliance’s approach on use of nuclear forces to “ensure uncertainty in the mind of any aggressor about the nature of the Allies’ response to military aggression” was not retained in the 2010 Strategic Concept but was not replaced by an alternative formula. It would be logical to fill that gap and to adapt the Nato doctrine to the new nuclear posture of the US.

Introduction to Session 1

Deborah Rosenblum
Executive Vice President
Nuclear Threat Initiative (NTI)

- I am very pleased to be chairing this session with such a distinguished group of experts. Before handing over to our presenters I just wanted to offer a few comments and questions that I hope will be picked up in the discussion.
- In order to make substantial reductions in the number of nuclear weapons and move us closer to a nuclear weapons free world, nuclear weapon states will need to take important steps to adjust their doctrines, force structures, and alert levels to reflect a reduced role for nuclear weapons.
- Such efforts should be led by the U.S. and Russia which possess approx. 95% of the world's nuclear weapons. Eventually, however, all states with nuclear weapons

will need to join the U.S. and Russia in nuclear arms reduction and limitation. Preserving and enhancing strategic stability throughout this process will be paramount – and the main topic of our discussion today.

- 20 years after the end of the Cold War, the world continues to live with thousands of strategic nuclear weapons, many of which remain on high alert. The reduction and elimination of this Cold War nuclear infrastructure is the largest piece of unfinished business from a bygone era and should be a priority for all states – beginning with the U.S., Russia, and NATO.
- NATO’s new Strategic Concept released in Lisbon in 2010 included an agreement by member states to work towards creating the conditions for a world free of nuclear weapons.
- Member states are now engaged in a review of NATO’s deterrence and defense posture, the results of which will be presented in Chicago in May.

- This review provides an important opportunity for states to devise a strategy which reflects the commitment to create the conditions to move toward a world free of nuclear weapons, including: how to engage in a constructive dialogue with Russia on nuclear and conventional arms as well as missile defense; and how NATO can adopt a declaratory policy that states the fundamental purpose of its nuclear weapons is to deter the use of nuclear weapons by others (bringing NATO closer to the use policies adopted by both the U.S. and the UK).

- Beyond this, *all* NWS should begin to seriously consider key issues relating to further nuclear reductions and stability at lower numbers, including:
 - What type of transparency measures will be necessary to enhance stability at low numbers?
 - How could developments in missile defense and conventional strike systems affect security calculations and stability at lower numbers?

- Will the U.S. need to adjust its policy of extended deterrence if it significantly lowers its numbers of nuclear weapons? And
- What changes to declaratory policy will be necessary to move toward lower numbers of nuclear weapons?

- To discuss these and other key issues, I'm pleased to have with us today Ambassador Jacek Bylica, Head of the Weapons of Mass Destruction Centre, NATO, Professor Malcolm Chalmers, Director, RUSI, and Professor Scott Sagan, Stanford University.

Ambassador Jacek Bylica, Head of the Weapons of Mass Destruction Centre, NATO

- From 2004 to 2008 (prior to joining NATO), Ambassador Bylica was Poland's Representative to Vienna-based international organizations, including the UN and IAEA.
- Mr. Bylica served for almost two decades in the Polish Foreign Service, including, posting at

the Polish Embassy in Beijing, serving as Head, Arms Control and Disarmament Division; Director, Department of Security Policy; Director, Asia-Pacific Department; and Director, Secretariat of the Minister of Foreign Affairs.

Professor Malcolm Chalmers, Research Director /
Director, UK Defence Policy Studies

- Professor Chalmers is also Special Adviser to the UK Parliament's Joint Committee on the National Security Strategy.
- He has also served as Visiting Professor of Defence and Foreign Policy in the Department of War Studies, Kings College, London, and was an FCO Special Adviser to Foreign Secretaries Jack Straw MP and Margaret Beckett MP.

Scott D. Sagan, PhD, Professor of Political Science
at Stanford University; Senior Fellow at the Center
for International Security and Cooperation

- Scott D. Sagan also serves as the co-chair of the American Academy of Arts and Science's Global Nuclear Future Initiative.
- Prior to Stanford, Sagan was a lecturer at Harvard University and served as a special assistant to the director of the Organization of the Joint Chiefs of Staff in the Pentagon. He has served as a consultant to the office of the Secretary of Defense and at the Sandia National Laboratory and the Los Alamos National Laboratory.

From Lisbon to Chicago: NATO's Deterrence and Defence Posture Review

Amb. Jacek Bylica

Head

WMD Non-Proliferation Centre

NATO International Staff

Introduction

First of all, I would like to thank the organizers of this event, the Landau Network – Centro Volta, the Nuclear Threat Initiative, and the Italian Foreign Ministry, for having me as one of the participants of today's discussion. I am in fact quite used to meetings chaired by Amb. Claudio Bisogniero, whom I would like to congratulate on his new important appointment. However, I must admit that coming from Brussels to Washington to speak on nuclear policies I do feel a little bit like this pathetic street peddler from an old Chinese fable who tries to make money by selling books on the doorstep of Confucius' home (Kongzi menqian maishu).

Nevertheless, allow me offer some remarks about the road NATO is taking from Lisbon to Chicago, the road which inevitably leads through Washington. Needless to say, these

remarks are delivered in personal capacity, and do not necessarily reflect any official positions. I would like to start with reminding ourselves what decisions have been taken at the Lisbon Summit regarding nuclear weapons, then describing the on-going, still unfinished process at NATO known as the Deterrence and Defence Posture Review, finally offer my personal thoughts on various factors which could shape its outcome.

Lisbon

Heads of State and Government of NATO Countries, assembled at the Summit in Lisbon (19-20 November 2010), describing in the new Strategic Concept the present security environment, reaffirmed their assessment that the proliferation of nuclear weapons and other weapons of mass destruction, and their means of delivery, threatens incalculable consequences for global stability and prosperity. They assessed that during the next decade, proliferation will be most acute in some of the world's most volatile regions.

As a direct result of this threat assessment they decided, inter alia, to commit NATO to:

[1] continue to play part in reinforcing arms control and in promoting disarmament of both conventional weapons and

WMD, as well as non-proliferation efforts;

[2] develop the capability to defend our populations and territories against ballistic missile attack, while actively seeking cooperation on missile defence with Russia and other Euro-Atlantic partners;

[3] further develop NATO's capacity to defend against the threat of chemical, biological, radiological and nuclear weapons of mass destruction.

At the same time, [4] the Strategic Concept committed the Alliance to a policy of deterrence based on an appropriate mix of nuclear and conventional forces which remains a core element of the Alliance's overall strategy. The Lisbon Summit Declaration also stated that NATO will maintain an appropriate mix of conventional, nuclear and missile defence capabilities.

The Strategic Concept clearly reconfirms that [5] NATO will remain a nuclear Alliance as long as nuclear weapons exist, notwithstanding the fact that the circumstances in which any use of nuclear weapons might have to be contemplated are extremely remote. It stresses the role of US, UK and French strategic nuclear forces in providing NATO with a supreme guarantee of security. Moreover, the Strategic Concept underlines the importance of the broadest possible participation

in collective defence planning in nuclear roles, in peacetime basing and in command-and-control arrangements.

At the same time, [6] the Strategic Concept and the Lisbon Summit Declaration commit the Alliance to create the conditions for a world without nuclear weapons, in accordance with the goals of the NPT, and for future reductions in NATO's nuclear stockpile. In any future reductions, NATO's aim should be to seek Russia's agreement to increase transparency on its nuclear weapons in Europe and relocate these weapons away from the territory of NATO members. Any further steps must take into account the disparity with the greater Russian stockpiles of short-range nuclear weapons.

DDPR

The Lisbon Declaration tasked the North Atlantic council to continue to review NATO's overall posture in deterring and defending against the full range of threats to the Alliance, taking into account changes in the evolving security environment. The Deterrence and Defence Posture Review (DDPR) is a comprehensive review of the capabilities and instruments that NATO will require to uphold effective deterrence and secure defence in the security environment of the 21st century. These capabilities and instruments include nuclear weapons and posture,

missile defence, the role of conventional forces in enhancing Allied security and other means of strategic deterrence and defence, particularly in coping with emerging security challenges such as proliferation of WMD and ballistic missiles, cyber attacks, terrorism, threats to critical infrastructure and supply routes, as well as energy security. NATO's nuclear posture review will only apply to nuclear weapons assigned to NATO by two Allies: US and UK.

DDPR is also examining the contribution of NATO's activities in the areas of crisis management, cooperative security, partnerships, as well as arms control, disarmament and non-proliferation – to an overall Alliance strategy of collective defence and enhancing security and stability beyond the Alliance's borders.

Let me stress that the results of the Posture Review are not preordained. The current Strategic Concept states that NATO will remain a nuclear Alliance as long as nuclear weapons exist, but the type and numbers of these weapons, as well as NATO's declaratory policy with respect to NW are being addressed as part of the Review process.

Finally, the progress of various arms control negotiations, both bilateral and multilateral, can have an important influence on the Posture Review. NATO

supports the US intention to engage Russia in negotiations on nuclear weapons in Europe, and the issue of increasing the transparency on tactical nuclear weapons has been raised by a number of Allies, but prospects for progress remain yet unclear.

The NAC retains overall responsibility for the process, seeking advice and inputs from other bodies within NATO as it decides. Needless to say, as all decisions in NATO, also this one will be taken by consensus.

Based on the Terms of Reference which were agreed by NATO Defence Ministers in March 2011, DDPR is being conducted in two phases:

[1] an exploratory thematic phase, which was completed in the early Autumn of last year;

[2] a drafting and negotiating phase to prepare a final document, which will be completed in time for the Chicago Summit (20-21 May 2012).

During Phase 1 (the exploratory phase) of the DDPR, which began in early May 2011, the NAC has considered the following broad topics which had been approved by NATO Foreign Ministers in a Work Plan.

[1] What are the threats, challenges and opportunities in

today's dynamic international security environment?

[2] What are the requirements for NATO's deterrence and defence?

[3] What is the appropriate mix of capabilities to meet NATO's requirements?

NAC has also sought outside expertise and views on these various topics. This took the form of a series of seminars and informal meetings. There was, in fact, a separate seminar on nuclear issues with outside experts. Some of them touched upon the issue of influence of new missile defence capabilities on nuclear deterrence.

In Phase 2 (drafting and negotiating phase), in Autumn 2011 the NAC requested advice from appropriate committees which were in essence three: the Defence Policy and Planning Committee (DPPC) which deals with conventional forces and missile defence, the High Level Group (HLG) which deals with nuclear policies, and the newly-created WMD Control and Disarmament Committee (WCDC) which deals with a broad range of arms control, disarmament and non-proliferation (ADN) issues.

Chicago

All the three Committees have completed their tasks and

provided the NAC with a range of options in their respective areas. These documents remain classified. However, in principle it is not difficult for experts to list the options which are available in the field of nuclear weapons. One such academic attempt to list them has been included in the excellent NTI study “Reducing Nuclear Risks in Europe”. There Dr. Karl-Heinz Kamp from the NATO Defence College listed a number of options, ranging from maintain the status quo, to the creation of a special NATO air wing dedicated to the nuclear mission and financed from common NATO funding. A number of those options listed by the NDC author involve also changing the footprint and/or the roles of the US weapons.

As the work is still on-going as we speak, it would be irresponsible if I attempted to predict the exact outcome. Allow me, however, to list some of the factors which, in my opinion, could be affecting these deliberations.

The first group of factors could be called “factors for change”, change being defined here as significant reductions either in the numbers or in the roles of NW in NATO deterrence policy:

[1] the desire not to appear “out of step” with the disarmament momentum generated in the international community by the “Four Horsemen” and embodied in President

Obama's Prague speech, and even more so – with recent changes in declaratory policies of US and UK, the only two nuclear weapon states which assign their nuclear forces to the Alliance;

[2] the need to address the arguments of alleged decreasing military utility of US sub-strategic nuclear weapons stationed in US bases in Europe, especially at the time when defence budgets are under increased scrutiny and strain;

[3] the need to deal somehow, probably rather sooner than later, with the issue of aging Dual Capable Aircraft (DCAs) in NATO countries involved in nuclear sharing arrangements;

[4] concerns about the safety and security of TNWs on the European Continent – but not the couple of hundred of weapons in US bases, but rather the thousands of Russian tactical nuclear weapons, many of them probably in direct vicinity to NATO territories (there is no clarity about the implementation by the Russian Federation of the obligations under the Presidential Nuclear Initiatives which also included withdrawal of TNWs to central storage locations).

At the same time, some unsettling developments in the international security environment could be clearly quoted as “factors for caution”:

[1] the unresolved proliferation cases of Iran and North Korea where new, worrying developments have taken place at the same time as NATO has been conducting the DDPR;

[2] the WMD-related developments of the “Arab Spring”: it would be sufficient to mention here the unveiling of hidden chemical munitions in Libya and concerns about the future of CW stockpiles in Syria;

[3] increased Russian reliance on nuclear weapons in its security strategy, new armaments programmes, and Moscow’s over-reaction to NATO’s missile defence plans, coupled with lack so far of major agreements between NATO and Russia on possible cooperation on MD;

[4] finally, as an observation of rather different nature, let me recall the obvious: that we are witnessing presidential campaigns, or managed transfers of power at the top, in four out of five recognized Nuclear Weapon States: the US, Russia, France and China, and this is usually not a good moment for making radical changes in security and defence policies: in turbulent times most candidates would not like to be accused of being “weak on defence”.

Conclusion

The DDPR process is well on track and on schedule. Important

substantive work has already been conducted by relevant NATO committees which have developed a number of options in their respective areas of responsibility. However, these separate strains of work need to be integrated which requires further challenging deliberations as well as decisions at higher, and possibly even the highest levels before results can be unveiled in Chicago. Given the broad recognition in NATO capitals that the international security environment is now less benign than when the DDPR had been mandated, it would be prudent not to set the bar of expectations for major changes too high.

Thank you for your attention.

**Nuclear stability at low numbers:
prepared remarks**

Malcolm Chalmers
Research Director
Royal United Services Institute

Principles

Nuclear stability at low numbers should not be seen only as a way-mark on the road to a world free of nuclear weapons. Although such an interim stage might be a necessary step along the path towards Global Zero, the wider political conditions in which it would be desirable may be more likely to exist than those needed for the more ambitious objective. Achievement of stability at low numbers will also require a different set of supporting operational conditions, for example in relation to verification and strategic non-nuclear capabilities.

For the purposes of this discussion, ‘low numbers’ is taken to mean a situation in which each of the nuclear-armed states possesses no more nuclear weapons than are estimated to be in the arsenals of China, France and the UK: that is around 150-300 warheads apiece. A total arsenal of this size should be sufficient, even after a first strike on its nuclear forces, to allow

the state in question to destroy a significant number of key targets (20-80?) in the territory of nuclear-armed adversaries. Even for the world's largest and most populous states, such a level of damage would be disproportionately large compared with any possible gains they could hope to achieve through aggression against other major powers.

Our analysis focuses on the seven states who now declare that they possess nuclear weapons, and are under no serious international pressure to give up their nuclear forces unilaterally. Israel is excluded from the analysis because it has not declared that it possesses nuclear weapons. If it were to do so, however, it could be included without fundamental changes in the main analysis. The DPRK is excluded because the international community is still determined to reverse its acquisition of a rudimentary nuclear weapons capability. India and Pakistan are included because the international community has largely given up its efforts to persuade them to abandon their nuclear weapons unilaterally. Instead, efforts now focus on finding ways to limit their nuclear capabilities, for example through the CTBT and a proposed fissile-material production cut-off treaty. A broader regime to limit the size of all nuclear arsenals, therefore, needs to include these two states.

In order to provide mutual assurance that the seven states are restricting their capabilities to ‘low numbers’, transparency and verification measures are likely to be required. First, for example, existing New START information exchange mechanisms could be extended to all seven states, so as to monitor those systems (especially deployed long-range ballistic missiles) that have the greatest potential for use in disarming strikes. Second, all seven states could agree to make announcements that their arsenals are being limited to low numbers, and accompany these with regular declarations on the total size of their weapon stockpiles, following the examples recently set by France, the US and the UK.

Nuclear stability at low numbers, as defined here, does not require a high degree of assurance that these stockpile declarations are fully accurate. If states successfully deny that hidden stockpiles exist when they make their declarations, the contribution that these additional weapons can make to deterrence is limited. The operational benefits from ‘breakout’ – revealing the existence of hidden warheads in a crisis – would also be low, given that all states would still have enough weapons to deliver unacceptable damage on an aggressor state. If a state suddenly announces that it has another 1,000 weapons

that it has not declared, the headline 1200 to 200 nuclear ‘superiority’ that this would create might have some shock value. But it would not affect mutual vulnerability to devastating retaliation. Stability at low numbers is possible precisely because, above a rather low level, numbers don’t matter much.

It could be argued, moreover, that some degree of residual uncertainty in relation to hidden stockpiles would contribute to deterrence. For a state contemplating a disarming first strike could never be certain that its victim had not hidden some weapons away, ready to be used (perhaps using relatively primitive delivery means, and with some delay) in the event of a surprise attack.

Nuclear stability at low numbers is not only about numbers. It would also be important that force reductions did not increase the perceived vulnerability of either the US or Russia to a disarming first strike. Capabilities that allow states to ‘ride out’ a nuclear attack before considering whether and how to launch a retaliatory strike would be particularly valuable. These include submarine-based forces, underground-based ICBMs, and mobile missiles, together with appropriate command and control facilities. By contrast,

it would be important for the US and Russia to move away from nuclear doctrines (and associated capabilities) that place a heavy emphasis on prompt, and large-scale, attacks on enemy nuclear forces. Mutual vulnerability (at least between states that still have concerns about each other) would have to be accepted as a reality.¹

One potential advantage of moving towards stability at low numbers is that it would allow the US and Russia to make steep cuts in the very substantial budgets that are now devoted to nuclear forces. For a process of force reductions to be credible it should involve reductions in numbers of missiles and nuclear bombers, as well as in total warhead stockpiles. As a consequence, one should expect the US and Russia to move towards nuclear capabilities more similar in structure to those of China, France and the UK. The US might, for example,

¹ There are two exceptions to this rule. First, there is no need for mutual vulnerability between the US, France and the UK. These states are permanent allies, and nuclear deterrence plays no role in their relations with each other. Second, the nuclear forces of India and Pakistan are currently configured to provide deterrence only in relation to each other and, in the case of India, against China. But India and/or Pakistan could develop long-range capabilities that could reach the US itself, and in the process develop mutual deterrence relationships with the US. This would not be a desirable development. Even if these two states were not to increase the size of their stockpiles, their acquisition of intercontinental missile capabilities would further complicate efforts at achieving multi-actor nuclear stability.

reduce its SSBN fleet to, say, five or six boats, consolidated in a single base. Its ICBM force – the force element least capable of ‘riding out’ a first strike – could be dismantled altogether. And the numbers of nuclear-capable aircraft could be sharply reduced. Russia could make reductions of comparable magnitude, but probably with more emphasis on retaining mobile ICBM forces, given the vulnerabilities of its missile submarines.

In order to reduce first-strike risks, it might be desirable for the proportionate reduction in weapons platforms – especially boats and aircraft – to be less than that in deployed warheads. Thus, for example, a reduction in deployed US Trident warheads to the same level as the UK would reduce total deployed SSBN numbers from 12 to 3 (a 67% reduction), but deployed numbers of missiles and warheads by around 90% (from 240 to 24 for missiles and from 1090 to 120 for warheads). Vulnerability risks could be reduced further were the US to maintain five or six submarines in active service.

Possible Obstacles

Both Russia and China are unlikely to accept nuclear stability at low numbers as long as there is a perceived risk that the US

could end mutual vulnerability through the large-scale deployment of strategic missile defences and conventional strike systems. Current US systems do not have such a capability, even against the small Chinese systems. But nuclear stability at low numbers would have to provide assurance that such a US capability could not be created rapidly (or covertly) in future.

This need not necessarily be the ‘deal breaker’ that it is often thought to be. If current efforts to restrain the nuclear and missile programmes of Iran and North Korea bear fruit, political support for rapid US development of BMD capabilities may weaken. And the proliferation of strategic missile defence capabilities could also lessen the destabilising impacts currently being felt as a result of the US’s leading edge in this area. A low-nuclear-numbers world will not be a defence-dominant one. But it could be a defence-complicated one, which would be enough to maintain the mutual vulnerability that is at the heart of nuclear stability.

The US’s unique role as a provider of extended nuclear deterrence is sometimes cited as a reason why its arsenal cannot be reduced to the low levels that characterise other nuclear weapon states. Yet in the primary region in which

substantial forces remain dedicated to this role – Europe – the main rationale for these forces is now political rather than operational. Even if these political rationales remain powerful to some, those European allies who are in greatest need of assurance have made clear that they would be willing to accept sharp reductions (or elimination) of forward-deployed US nuclear systems, provided that this was matched by a deep reduction in Russia’s own non-strategic forces. Since the scenario of Low Numbers assumes that both the US and Russia have reduced to arsenals numbered in the low hundreds, this condition will have been met. Extended deterrence could continue to play an important role, deterring nuclear threats against non-nuclear allies of the US in Europe, East Asia or (possibly) the Middle East.

In a world of zero nuclear weapons amongst the established nuclear weapon states, the possible acquisition of nuclear weapons by other states (such as Iran) would continue to be a threat to the global nuclear order. Strong guarantees against such an event are therefore a necessary condition for getting to zero. No such guarantee is needed in a Low Numbers world, which remains compatible with the existence of smaller nuclear arsenals in states outside a Low Numbers arrangement.

It is sometimes argued, especially in the US, that deterrence at low numbers would be less ethical because it would require increased reliance on counter-city targeting than current doctrine, which produces a target list focused primarily on attacking enemy forces. Yet both doctrines are morally questionable, relying as they do on a threat (in certain circumstances) to launch attacks that would be bound to involve massive human suffering. The main circumstances in which nuclear doctrine could be more ethical, in terms of casualties caused, would be those in which nuclear forces are used (alongside other capabilities) in order to disarm an opponent's nuclear forces before they can be used. While such a posture may be the aim of military planners, however, in practice it would be almost impossible to execute. Even the best-planned first strike (launched without warning) could not guarantee that there would be no retaliatory action.

Sole Purpose?

Low Numbers do not require that all nuclear-armed states adopt a declaratory policy of No First Use, as China has done. But it would require that states give up the attempt to use nuclear weapons as tactical weapons, designed to shape the outcome of conventional battles (such a requirement, as

the Cold War showed, generates a requirement for massive arsenals). Low Numbers would, however, still give states a 'last resort' capability, in which the threat of nuclear use would contribute to deterrence of nuclear attack by others, as well as contributing to deterrence of military threats to the very existence of a state.

How far states emphasise the second of these objectives depends on their perceived degree of vulnerability to conventional invasion. Perhaps the most challenging scenario for Stability at Low Numbers is a conventional war, in which small nuclear forces could be progressively, but unevenly, degraded. Such a risk could be mitigated, for a state under conventional pressure, by maintaining a degree of uncertainty over the size of its warhead stockpile, reinforced by the maintenance of some reconstitution capability. It also suggests that those states that are most vulnerable conventionally may be less likely to want to accede to intrusive transparency measures that could weaken the deterrent value of their nuclear arsenals.

Such a concern is less of a problem for large states which are almost impossible to occupy (such as the US, China, India and Russia), for states (such as the US and, in future, China)

which possess formidable conventional capabilities, or for states (such as the UK and France) which, although small, do not face any plausible invasion threats. In current circumstances, therefore, Pakistan is the only one of the seven nuclear-armed states that has a well-founded concern in this regard. If other countries – such as North Korea, Iran or Saudi Arabia – were to join the nuclear club, they would also be likely to fall into this more nuclear-reliant category, especially if they were to lack conventional protection from a major power.

Getting to Low Numbers

Even if nuclear stability is possible at low numbers, however, the difficulties that would have to be addressed to get there are considerable, especially for the two states – the US and Russia – which would have to reduce their arsenals by 90% from current levels to reach the levels of other nuclear-armed states. The central problem relates to the politics of parity. The numerical balance of nuclear forces between the two states is largely irrelevant operationally. But, in large part because of the Cold War experience, it does matter politically. The US President might find it especially difficult, as the leader of the world's single superpower, to explain why he was prepared

to have an arsenal smaller than that of Russia.

The next stages in getting to low numbers are critically important, if the process of mutual US / Russia reductions is not to be bogged down by competing concepts of what ‘parity’ means, or by an arms control process that impedes rather than supports mutual disarmament. It would be unwise, for example, for Russia to be more transparent in relation to the size of its own arsenal until it is also prepared to reduce that arsenal to a level comparable with, or below, that of the US. And it would be unwise for the US to focus exclusively on aggregate verifiable limits on nuclear weapons numbers in the absence of acceptable verification mechanisms, especially if no agreement has yet been reached on BMD limitations.

A more fruitful set of first steps might include the following:

- Coordinated reductions in US and Russia strategic arsenals to levels well below New START ceilings. Both countries could agree to progressively reduce their numbers of deployed strategic warheads, for example, to 1,000 each without the need for a further treaty (compared to the Treaty ceiling of 1,550). The US could also reduce its number of deployed missiles and

bombers from the New START ceiling of 700 to the level currently deployed by Russia (currently around 530), or below this if Russia is prepared to follow suit. These steps would be reversible (helping to meet Russian concerns over US missile defence plans). But they would be verified, through existing New START information exchanges.

- Coordinated reductions in US and Russian nuclear arsenals not covered by New START. On the Russian side, this would require a willingness to accompany any transparency declaration with plans for a significant reduction in the non-strategic stockpile. On the US side, this would be likely to include cuts (or possibly elimination) in its European stockpile.
- Coordinated declarations by China, India and Pakistan on the total size of their nuclear stockpiles, alongside greater openness on (and clear limitations to) plans for future growth.

- Further restraint from France and the UK, as the two most secure nuclear-armed states. For France this might include the scrapping of the second air-based leg of its dyad, which would reduce its total arsenal from 300 to around 200. For the UK it might involve some further reduction below its current commitment to deploy only 120 warheads.

Nuclear Doctrine and Nuclear Disarmament

Scott D. Sagan

The Caroline S.G. Munro Professor of Political Science
Center for International Security and Cooperation

The purpose of this panel is to analyze what changes in nuclear doctrine, force structures, and alert levels could be adopted that might lead toward nuclear disarmament and stability at lower numbers of nuclear weapons. My contribution to the discussion will focus attention on three doable but challenging potential changes in nuclear doctrine that I believe could encourage the United States, and through U.S. leadership, other governments as well, to move toward lower numbers and eventually to a world without nuclear weapons: 1) adopting a clear and consistent No-First-Use nuclear doctrine; 2) rationalizing the organizational procedures and rules that govern nuclear targeting plans and thus weapons “requirements” in the U.S.; and 3) placing the principle of civilian non-combatant immunity at the heart of nuclear doctrine and making deterrence focused on the threat of justified punishment of political leaders and military officers who order and implement the first use of nuclear weapons.

These three potential changes in nuclear doctrine are complementary and together would make safe and stabilizing reductions in nuclear weapons more likely.

1. No-First-Use

The United States took two important, but limited steps, toward adopting a no-first-use nuclear weapons posture in the 2010 Nuclear Posture Review (NPR). First, the NPR clearly set out the aspiration of adopting a policy of making deterring nuclear weapons the “sole purpose” of the U.S. arsenal in the future (“sole purpose” is the more politically acceptable term for “no-first-use” in the U.S.), stating that there is only “a narrow range of contingencies in which U.S. nuclear weapons may still play a role in deterring a conventional or CBW (chemical and biological weapons) attack against the United States or its allies and partners.” While the NPR was therefore not willing to adopt what it called “a universal policy that deterring nuclear attack is the sole purpose of nuclear weapons,” it did proclaim that the U.S. “will work to establish the conditions under which such a policy could be safely adopted.”² Second the 2010 NPR also significantly

² U.S. Department of Defense, “Nuclear Posture Review Report,” April 2010, p. viii.

strengthened the Negative Security Assurances (NSAs) that the U.S. was willing to give to NPT compliant non-nuclear weapons states: “The United States is now prepared to strengthen its long-standing ‘negative security assurance’ by declaring that the United States will not use or threaten to use nuclear weapons against non-nuclear weapons states that are party to the NPT and in compliance with their nuclear non-proliferation obligations.”³

The U.S. government is now engaged in discussions with allies in NATO and in the Far East on how best to move toward such a sole purpose doctrine. Two basic points should be made more clearly in these discussions about the future of extended nuclear deterrence. First, the term “nuclear umbrella” should be banned from our strategic lexicon for it does not differentiate between a U.S. guarantee to respond with nuclear weapons in the event that an ally is attacked by another states’ nuclear forces and the threat to use U.S. nuclear weapons first in the event of a conventional or CBW attack. The former should be maintained, but the latter could be dropped under a no-first-use doctrine. Second, decisions about what

³ U.S. Department of Defense, “Nuclear Posture Review Report,” April 2010, p. viii.

conventional capabilities will be deemed adequate to deter non-nuclear attacks by adversaries must be an allied decision. British Defense Minister Dennis Healy often noted during the Cold War, however, that the requirement for reassurance of allies appeared significantly higher than that needed for deterrence of potential adversaries.⁴ The heat of U.S. and allied debates about the requirements of conventional deterrence today should be tempered by that wise observation.

Adopting a strict no-first-use policy would both reduce the risk of U.S. nuclear weapons use in the event of conventional conflict or CBW attack and reduce the number of nuclear weapons perceived necessary by limiting their roles and missions and eliminating targets that might otherwise have to be “covered” by nuclear forces.⁵ I believe that U.S. adoption of a strict no-first-use doctrine would also encourage India, which added caveats concerning nuclear responses to CBW attacks to its nuclear posture in March 2003, to move toward a more clear and consistent doctrine.

⁴ Denis Healey, *The Time of My Life*, (London: Michael Joseph, 1989), p. 243.

⁵ For more on the costs and benefits of a no-first-use doctrine, see Scott D. Sagan, “The Case for No First Use,” *Survival*, June-July 2009; and Morton H. Halperin, Bruno Tertrais, Keith B. Payne, K. Subrahmanyam, and Scott D. Sagan, “The Case for No First Use: An Exchange,” *Survival*, October-November 2009.

2. Rationalize Targeting Policy and Assessment Criteria

The second helpful change would be to reform the process and assessment criteria by which the U.S. military makes its nuclear targeting decisions. In reality, these so-called “damage expectancy requirements” are based on arcane, and often arbitrary, technical judgments and hidden bureaucratic routines that were developed during the Cold War and have not changed significantly since then. The result is that the current U.S. nuclear targeting process both grossly underestimates the destructive effects of U.S. nuclear weapons and grossly overestimates the need for a large number of nuclear weapons to destroy particular targets in Russia, China, or elsewhere in the world. Unclassified briefings by the Strategic Command reveal many examples of this “weapons inflation” phenomenon. For example, only the blast effects and not the thermal effects of U.S. nuclear weapons are taken into account, although we know that immediate thermal effects and firestorms also cause widespread destruction of many kinds of targets. It is also worth noting that hardened targets, such as ICBM silos, may be hit by two nuclear weapons, but the current techniques do not permit assessments of previous blast damage, again increasing the “required” numbers of

nuclear weapons to achieve the desired damage criteria. Finally, non-combatant casualties also are deeply underestimated by this process as targeting staffs do not take into account firestorms and assume that all civilians stay in bomb shelters for 30 days after a nuclear attack, an utterly unrealistic assumption.

It is very important for civilian leadership to understand and reform what Lynn Eden has called “the internal and largely hidden logic of U.S. plans to use nuclear weapons if deterrence fails.”⁶ To their credit, the Air Force planners are becoming more transparent about the assumptions and limits of their techniques than in the past and appear open to changing assumptions and procedures. Stronger civilian guidance and sustained leadership could make an important contribution here toward reducing nuclear weapons “requirements” by insisting that more accurate measures of nuclear effects be developed and utilized.

⁶ Lynn Eden, “The U.S. Nuclear Arsenal and Zero: Sizing and Planning for Use—Past, Present, and Future,” in *Getting to Zero: The Path to Nuclear Disarmament*, ed. by Catherine McArdle Kelleher and Judith Reppy (Stanford University Press, March 2011), p. 69.

3. The Principle of Non-combatant Immunity

A third important change would be to take the Just War principle of non-combatant immunity more seriously and place it at the heart of U.S. nuclear doctrine. Here I note that there is a serious intellectual and moral tension at the core of the current popular movement to work in good faith toward “a world without nuclear weapons.” Much of the motive for this movement is based on a fundamental moral belief that basing our national security on the threat to kill millions of innocent civilians in a nuclear war is simply wrong. Yet many scholars, strategists, and policy makers who support the goal of moving toward a world without nuclear weapons are comfortable moving to, but only to, what they see as a “minimum deterrent” arsenal of a few hundred weapons capable of destroying a small number of cities of any adversary if deterrence fails. This comfortable criterion for nuclear “stability” for the strategist is thus a source of moral repugnance for the ethicist.

I do not have the answer on how best to square that circle. But I do believe that the 2010 NPR at least pointed us in the right direction with its new Negative Security Assurances regarding chemical and biological weapons use: “In making this strengthened assurance, the United States

affirms that any state eligible for the assurance that uses chemical or biological weapons against the United States or its allies and partners would face the prospect of a devastating conventional military response – and that any individuals responsible for the attack, whether national leaders or military commanders, would be held fully accountable.⁷

We are clearly a long way off from basing nuclear deterrence on the threat to target and “hold accountable” leaders who order the use of nuclear weapons first and the military commanders who execute such orders. But if the U.S. is serious about holding political and military leaders responsible for initiating the use of chemical and biological weapons of mass destruction, it should explain how it plans to implement this policy using conventional precision munitions, perhaps supplemented by non-military means, both to increase the credibility of the deterrent threat and to encourage other states to follow suit. And the U.S. government could encourage new strategic thinking about how the principle of non-combatant immunity could be applied with more rigor in a world without nuclear weapons or a world with very small

⁷ U.S. Department of Defense, “Nuclear Posture Review Report,” April 2010, p. viii. (Emphasis added).

nuclear arsenals. Such a doctrine would be intellectually consistent with the long-standing tradition in U.S. nuclear strategy of targeting an adversary's leadership and command and control capabilities as a key component of deterrence. Such a doctrine would be more consistent with moral principles of non-combatant immunity, though clearly concerns about collateral damage and proportionality would remain. Such a doctrine should be set now as an aspiration, a more ethical doctrine to be developed over time and maintained in a world without nuclear weapons.

Introduction to Session 2

Maurizio Martellini
Secretary General
Landau Network Centro Volta

I am honored to be the chair of this important session and to have co-organized with NTI this valuable brainstorming event.

As a technical figure, I consider the topic enlightened in this session very crucial, in particular the mechanisms of verification and monitoring to be implemented in a world with a substantial lower number of nuclear weapons.

Before giving the floor to the distinguish lecturers of this session, allow me to share with you some considerations related to this matter. In the scenario of a world with a lower number of weapons, I consider of the outmost importance to have a framework to improve effectively nuclear non proliferation, in particular concerning material, equipment and knowledge related to these weapons and to their delivery systems. Under this perspective, other international instruments could play an essential role to have a “sustainable

strategic stability” in this scenario.

Among these instruments, one deserves a particular mention, namely the Global Partnership against the Spread of Weapons and Materials of Mass Destruction, since it has been an essential multilateral instrument to solve the post Cold War legacy of Former Soviet Union, and to halt a potential horizontal proliferation of nuclear weapon related technologies, material and expertise. Similarly, the progress towards a world free of all nuclear weapons might demand another “grand GP vision”, like the Kananaskis one for the FSU, to address now the elimination of thousands nuclear warheads worldwide, i.e. not anymore confined to a particular geographic region, and then the consolidation of huge quantities of weapon-grade nuclear material.

This reference to the GP has also a particular meaning here, since the country where this seminar is taking place, the United States of America, is currently having the G8GP Presidency. I think that it could be of, at least, academic interest to envisage how some GP tools/methodologies could be used to reduce the risks of nuclear proliferation moving towards “global zero”.

What is the process for getting to a world with much lower numbers of nuclear weapons?

James Acton

Senior Associate

Carnegie Endowment for International Peace

As strategic arms control has developed over the last 40 years, it has become steadily more ambitious. The first bilateral arms control treaty—the Strategic Arms Limitation Talks (SALT) I Interim Agreement—limited only launchers for missiles (silos, submarines and submarine launch tubes). By contrast, the New Strategic Arms Reduction Treaty (New START) limits not only missile launchers but also bombers, missiles and deployed strategic warheads. Further innovations will be needed if the number of nuclear weapons is to come down much further.⁸ Because the only warheads limited by New START are those actually emplaced on long-range delivery vehicles (“strategic deployed” warheads), about 70% of the total inventory of U.S.

⁸ For a detailed discussion of the practical challenges of getting to low numbers and of how they might be overcome see James M. Acton, *Low Numbers: A Practical Path to Deep Nuclear Reductions* (Washington, D.C.: Carnegie Endowment for International Peace, 2011), www.carnegieendowment.org/files/low_numbers.pdf.

warheads and a similar or larger percentage of the Russian arsenal are not currently regulated. To correct this lacuna, the United States has argued that all types of warhead—strategic, tactical, deployed and non-deployed—should be covered by the next round of arms control. Looking even further ahead, arms control will have to be extended to two new areas if truly low numbers (a few hundred warheads) are to be attainable. First, bilateral efforts will need to be extended from weapons-in-being to weapon-production capabilities. Second, other states possessing nuclear weapons must be included in arms control and their arsenals regulated. Both of these challenges are formidable but steps can be taken in the short-term to advance these long-term goals.⁹

Restart Reciprocal Transparency Visits to Nuclear-Weapon Production Complexes

As their nuclear arsenals shrink, Russia and the United States are likely to become increasingly concerned about the possibility of the other rearming. Indeed, Russia is already

⁹ The remainder of this paper was originally published in James M. Acton, “Getting STARTed: Short-Term Steps to Advance the Long-Term Goal of Deep Nuclear Reductions,” Policy Outlook, Carnegie Endowment for International Peace, July 7, 2011, http://www.carnegieendowment.org/files/Getting_STARTed1.pdf.

worried about the U.S. upload potential. Future limits on warheads—as well as on launchers and delivery vehicles—would help ease these fears. However, the possibility of building warheads from scratch will remain and must eventually be addressed.

The American and Russian nuclear-weapon production complexes are currently very differently sized. The United States has not introduced a new warhead type into its arsenal since the end of the Cold War. It ensures the viability of its aging warheads through periodic efforts to extend their service lives. Currently, it can produce no more than about twenty pits (the plutonium cores of nuclear weapons) per year.¹⁰ Russian warheads, by contrast, are reported to have service lives of only ten or fifteen years.¹¹ Russia must continually manufacture warheads (to either new or existing designs) to replace those that are retired. It has the capability to produce a few hundred pits per year, if not more. It also has a greater capability than

¹⁰ Stephen Young and Lisbeth Gronlund, “The Cart Before the Horse: DOE’s Plan for the Future of the U.S. Nuclear Weapons Complex,” Working Paper, Union of Concerned Scientists, May 2008: 8, <http://www.ucsusa.org/assets/documents/nwgs/cart-before-the-horse-ucs-final-050508.pdf>.

¹¹ Oleg Bukharin, “A Breakdown of Breakout: U.S. and Russian Warhead Production Capabilities,” *Arms Control Today*, vol. 32, October 2002, http://www.armscontrol.org/act/2002_10/bukharinoc02.

the United States to assemble complete warheads from their components—although the disparity here is not quite as severe as that in pit production capabilities.

As numbers come down, the difference between the U.S. and Russian complexes will become increasingly significant. Accordingly, the United States should adopt two long-term arms control goals. First, it should seek to reduce the size of Russia's nuclear-weapon production complex. Second, it should aim to enhance the transparency of both states' complexes to ensure timely warning of rearmament.

Both of these goals are exceptionally challenging and, realistically, this issue is nowhere near ripe for formal negotiations. However, progress could be made almost immediately by reviving informal visits to one another's nuclear-weapon production complexes. Such visits occurred previously between the Siberian Chemical Combine at Seversk and the Los Alamos National Laboratory from 1994 to 1998 (actually as part of an effort to improve fissile material security). Restarting these visits would enhance mutual transparency and ultimately pave the way for formal limits some way down the line.

The goal of enhancing nuclear-weapon complex transparency has implications for the United States' own plans. The Obama administration is seeking to revitalize the U.S. nuclear-weapon infrastructure, including by modestly increasing U.S. pit production capability. These plans are broadly to be welcomed, as they would help close the gap in production capacity with Russia and thus enhance stability at low numbers. However, they need to be modified slightly in order to ensure full consistency with arms control objectives. In particular, the United States plans to build two new facilities: the Chemistry and Metallurgy Research Replacement at Los Alamos and the Uranium Processing Facility at the Y12 National Security Complex in Tennessee. To facilitate future reciprocal visits, the United States should include transparency as a design criterion for both facilities.

Engage Other Nuclear-Weapon States

Both Russia and the United States have made it clear that the arms reduction process will eventually have to be multilateralized. To reach truly low numbers, the arsenals of all states that have acquired nuclear weapons without violating international law will have to be regulated and those of other

nuclear-armed states rolled back. The first step is to broaden the U.S.-Russia process to include the other three nuclear-weapon states recognized by the NPT (China, France, and the United Kingdom).

Many analysts and officials in both Washington and Moscow are currently talking about “one more major bilateral nuclear arms reduction negotiation.”¹² By contrast, British, Chinese, and French officials discuss multilateral arms control as a much more distant prospect. Some even insist that their states should be formally involved only at the final step of actually abolishing nuclear weapons!

Neither of these positions is entirely reasonable. Today, the United States and Russia each have around 5,000 nuclear warheads (with many more awaiting dismantlement); the British, French, and Chinese arsenals are a factor of 10 or 20 smaller and considerably less capable. Because there will continue to be a large gap—both in terms of numbers and capability—even after the next round of U.S.-Russia arms control, it would be unreasonable for Moscow and Washington

¹² Quoted in Cheryl Pellerin, “New START Treaty to Take Effect Feb. 5,” American Forces Press Service, February 2, 2011, www.defense.gov/news/newsarticle.aspx?id=62656.

to immediately demand the initiation of formal multilateral arms control negotiations. Equally, it would be unreasonable for China, France, and the UK to stay out of the arms control process entirely. Russia and the United States do have valid concerns—including the fear that China will build up as they build down—even if five-way treaty negotiations would not be the right mechanism for addressing them.

A more productive approach would be for France, the United Kingdom, and, in particular, China to take part in a multilateral transparency regime. Under various bilateral agreements, Russia and the United States have conducted—and still conduct—extensive data exchanges about their nuclear forces. (The START data exchanges were even made public.) China, France, and the UK could participate in a similar process on a voluntary basis. They could start by periodically releasing simple aggregate data about warhead, missile, and launcher numbers (indeed, France and the UK have already done so, but only on an ad-hoc basis). Over time, they could gradually increase the degree of detail in their declarations. Information could be exchanged just among the five nuclear weapon states or it could be made public. Either way, such transparency could help reassure Russia and the United States about British,

Chinese, and French intentions and thus permit them to make deeper bilateral reductions than would otherwise be the case. It would also pave the way for treaty-based multilateral arms control at some point in the future.

China, in particular, would have serious concerns about such a process. Its current policy of opacity stems, in part at least, from the fear that greater transparency would undermine the survivability of its nuclear forces. Meanwhile, the United States is reluctant to assure Beijing that it does not seek to undermine China's deterrent, partly because of concerns about China's ongoing nuclear modernization. A program of mutual strategic reassurance between China and the United States is, therefore, a first-order priority. The Obama administration, like its predecessor, has tried hard to initiate such a process, although so far with limited success. If talks do occur, they will unquestionably prove slow and difficult—but they are supremely important. In the meantime, there is no reason why France and the UK could not participate in data exchanges without Chinese involvement. Doing so might usefully put international pressure on Beijing to start the slow process of strategic engagement.

The Process for the Reduction of Nuclear Weapons to Lower Levels

Ambassador Thomas Graham Jr.

Former Special Representative of the President for Arms
Control, Nonproliferation, and Disarmament

The Nuclear Nonproliferation Treaty (NPT) is the central security instrument for the world community in the present age. It is founded on a basic bargain a central element of which is disarmament and an important part of that is a world-wide deep reduction in the number of nuclear weapons

Paul Nitze was the archetypical Cold Warrior and nuclear weapon strategist. As the principal author of NSC 68 in 1950 he helped set the ground rules for the Cold War and the thermonuclear confrontation. However, nearly fifty years later in an op-ed he wrote at the age of 92 in 1999 entitled “A Danger Mostly to Ourselves he said “I know that the simplest and most direct answer to the problem of nuclear weapons has always been their complete elimination.” And nuclear weapons in fact have become a “danger to ourselves” as a result of the disappearance of any role for them in the wake of

the end of the Cold War, the rapid and broad spread of the relevant technology, the rise of international terrorism and the decline in world order. In their famous op-ed article of January 4th 2007, the authors George Shultz, William Perry, Henry Kissinger and Sam Nunn asserted that reliance on nuclear weapons for deterrence “is becoming increasingly hazardous and decreasingly effective” and quoted President Ronald Reagan’s depiction of nuclear weapons as “totally irrational, totally inhumane, good for nothing but killing, possibly destructive of life on earth and civilization.” The authors called for “practical steps” to move toward elimination of nuclear weapons which steps include continuing substantial reductions in nuclear weapon stockpiles world-wide; achievement of the ratification of the Comprehensive Test Ban Treaty (CTBT) and a termination of the production of fissile material for weapons everywhere.

So if nuclear weapon stockpiles are to be reduced world-wide to low levels how can this be accomplished? President Obama in his speech in Prague in April 2009 briefly referred to this process. He said that first, the role of nuclear weapons in national security strategy must be reduced and then

a new Start treaty should be negotiated. After this, he said, the stage will be set for “further cuts and we will seek to include all nuclear weapon states in the endeavor”. This is where we are now, this is the way ahead and like the four authors previously quoted President Obama asserted that to assist this process the CTBT should be brought into force and the further production of fissile material for weapons should be prohibited.

But what next, how do we proceed from where we are to drastically lower numbers of nuclear weapons in the world? The following steps could be a possible path to deep reductions, in addition to the test ban and a fissile material cut-off treaty.

First, the five NPT nuclear weapon states (the United States, the United Kingdom, France, Russia and China) and the three hold-out states (India, Pakistan, and Israel) would agree to take all weapons off alert status.

Second, the U.S. and Russia could negotiate a second Start treaty bringing the total number of nuclear weapons down to 1000, including those in storage and repair and explicitly

including tactical weapons – something Russia has thus far resisted.

Third, once this level of 1000 weapons is reached a five power nuclear reduction negotiation could begin among the five NPT nuclear weapon states with account taken of India, Pakistan and Israel in a related process. The objective could be 300 weapons each for the U.S. and Russia, 75 each for Britain, France and China, and perhaps 20 each for India, Pakistan and Israel. North Korea should return to the NPT and dismantle its small arsenal. This would establish much lower levels, but in today's world the deterrent status of all the countries involved would not change.

To accompany this process intrusive verification measures would have to be developed possibly involving certain other non-nuclear countries as well and perhaps security guarantees for states on the edge of conflict contemplated. Nuclear power production might need to be configured so as to make no more plutonium, the nuclear fuel cycle in the global community might need to be controlled and limited under this agreement, and existing spent fuel containing plutonium, as

well as separated reactor grade plutonium, internationally secured in some way. These large amounts of fissile material could become relevant to the balance at these lower levels.

But if all this could be accomplished and these levels reached, the world would be a safer place and global zero would at least be in sight to be accomplished, hopefully, one day. But this brief description underscores the complexity and difficulty of the task. Likely it will take many years and much international cooperation and perseverance to accomplish but the objective is worth the effort.

On the process towards low numbers of nuclear weapons

Harald Müller

Executive Director

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I. Avoid the sink

In evolutionary biology, there is the metaphorical term of the “sink”. A sink is an evolutionary dead-end street: A species has adapted perfectly to a given environment, but the whole organism has become so wedded to this particular environment that there is no way to adapt to changing circumstances. The species is doomed when facing imminent change.

The effort to ensure deterrence in a world with very low numbers bears the risk of creating a sink. If nuclear powers adapt their force structures, doctrines, organizations, standard operational procedures etc. with a view to obtain perfect deterrence at low levels there is a great probability that they will never find the way to zero because all structures are programmed to stay where they are. In addition, because there are no technical fixes to political problems, sudden crises may engender panic – the reassuring nuclear fat on the bones,

presented by redundant capabilities would be gone). There is the real possibility of nuclear escalation.

Stability is, after all, a *political* problem. Political factors will weigh the more the fewer nuclear weapons exist. The better politics of disarmament are going, the higher the chances to arrive at low numbers without stability risks. American strategic culture, it is well known, has a predilection for technical fixes. This attitude should change. It is unlikely that in the absence of strategic cultural change, we will much advance down the disarmament ladder.

II. Great power relations: mitigate political conflict

The disarmament process hinges on great power relations. The US and China look at each other with distrust. China expands its arsenal slowly, the US pursues a hedging (keep the triad) and circumvention for superiority (NMD/ prompt long-range conventional options) posture. Neither is helpful for disarmament. Russia does not want to lose credible deterrence vis-à-vis the US and has concerns about China. Hedging is the name of the game in Moscow as well. India adapts its deterrent in response to the Chinese build-up, Pakistan follows India.

The first priority is to get US-Chinese relations right. The recent shift of US military commitments towards Asia is not conducive for that purpose. Nor are Chinese claims towards smaller neighbours, or threats against Taiwan. The US and China share many common interests: Stability across the region, secure sea lanes, security against transnational terrorism. It should be possible to find a *modus vivendi*. China must be reassured that it will play a world power role, and have access to needed raw materials, but must be asked to relinquish territorial claims against India, Japan, South Korea and ASEAN (this would also help solve the problem between China and India). The US should make it credible that it does not regard absolute superiority (notably NMD and space) as necessary to protect itself against China.

US-Russian relations are also sour. They could be sweetened by a moratorium on NATO extension (the Alliance has accepted more corrupt governments than advisable anyway), a legally binding limit on US NMD, and a benign and non-threatening Russian policy towards smaller neighbors (a change of an attitude that has been lasting since Ivan the Terrible).

World powers should form a *concert* to deal with crises and to enforce non-proliferation rules. The bickering over Iran and the DPRK reflects a situation of rivalry. Geopolitical gain, however, is running against the long-term national interest of all major players which lies more in stability and a framework conditions for continued economic growth. Concerting is a time-honored way to run great power relations. In the age of the net, video conferencing or skype, concerting has become so much easier to accomplish than in past periods.

III. Great Power Relations: Confidence-Building

As great powers reduce their nuclear arsenals, they must install tools of confidence-building that go beyond the trivialities of today. Telling “this is impossible” means, in effect, that deep reductions, not to speak about zero, will never occurs. This may be so. But then the likelihood of rampant proliferation, nuclear terrorism and, eventually, one or more nuclear wars rises by the years – according to the assembled wisdom of the “four horsemen”.

Thus, there should be clarity about doctrines, postures, and numbers. At low levels, all nuclear weapon states (NWS) should have turned to a doctrine of no first use. Only

if nuclear weapons serve no other purpose than to deter nuclear weapons has the promise to strive for a zero nuclear weapons free world credible strategic logic. By implication, this would mean an unconditional negative security guarantee for all non-nuclear weapon states (NNWS).

No-first use small arsenals would not need weaponry for highly selected employment. Sub-strategic nuclear weapons and nuclear weapons on bomber aircraft with strategic as well as sub-strategic range would be obsolete. These weapons should be a target for reduction and elimination on the way towards low numbers. This does necessarily mean that retaliation options would be aiming at the complete destruction of the enemy. There may be limited retaliatory options. But they would have to be conducted by the remaining assets which have no special attributes which are particularly conducive for selective, tactical use.

The size of the arsenals should be declared at low numbers. Verification of these numbers should be in place. This does not imply that each partner would have to know where each weapon system is deployed at any time; the stealth of nuclear armed submarine and mobile long-range missiles would retain its deterrence ensuring function at low numbers. But the size of

the total holdings would be known. To phase-in such a happy end-state, all nuclear weapon possessors should declare today upper limits which they would not trespass; such a declaration could deviate from actual holdings, creating headroom for those who believe that their arsenals were below security needs, and creating the appearance of robust deterrence for those who would not like to reveal how small their nuclear weapon assets really were..

NW holders not presently bound by arms control treaties would declare their real totals in sealed envelopes that would be kept in escrow (e.g. in the IAEA) until the last steps towards zero are on the agenda. From the moment of depositing this declaration on, nuclear weapon possessors would declare annually changes. Before the last steps to zero, the sealed envelopes would be opened. A declared inventory would then exist which the verification agency (the IAEA in new capacity or something else) could work with. As the verification system at low numbers or even zero would be much stricter than anything existing today, cheating on the sealed declaration would imply high risks of being caught some time in the future. Further confidence-building measures are conceivable. On dealing many good suggestions exist. Exchange of personal

among military planning staffs would be revolutionary. The stationing of liaison officers of other NWS (or an international agency) in the launch centers of each NWS, connected to their national headquarters with tamper-proof communication devices, would be a huge step to prevent fears of preemptive strike.

IV. A final, politically incorrect thought

In ancient times, the primary confidence-building measure was placing close relatives of leaders as hostages in the opposite camp. It was not a bad idea. If there was a permanent stream of children/grandchildren of Chinese politbureau members and Russian leaders to US universities, of the progeny of US presidents, cabinet members, and senators to Russia and China-based US companies, a lot of mutual bonding, hard to destroy, would be created. The idea to kill beloved ones by a nuclear strike is even more absurd than a first strike is in itself. Given the amateurish and parochial way the world is still run by its big powers, looking at ancient customs might help to propel progress towards zero.

Remarks

Randy Rydell

Senior Political Affairs Officer

United Nations Office for Disarmament Affairs

It's been said that “where you stand depends on where you sit” and this applies to my remarks today—the views of one person who works in the UN Secretariat on disarmament issues.

This Session is focused on issues relating to “process”—the “how’s” of disarmament, or more precisely, the how’s of achieving stability at low numbers. A fully comprehensive disarmament approach would have to explore how to achieve the next step of stability at zero nuclear weapons. Such an approach would have to examine a full range of relevant actors in this process, beyond the narrow focus on the nuclear-weapons states. This approach would finally have to ensure that the pursuit of “stability at low numbers” is in fact a “step” toward disarmament rather than a nuclear arms control plateau or end-state—there is a need to avoid conflating the old goal of nuclear disarmament with nuclear arms control.

The goal of achieving a nuclear-weapon-free world is not new—it appeared in the General Assembly’s first Resolution, adopted in 1946, and is one of the oldest goals of the UN organization. Since then, the UN has been pursuing the “elimination” of all nuclear weapons and other weapons of mass destruction, and the “limitation and regulation” of conventional arms—here, conventional arms control and WMD disarmament are viewed as mutually reinforcing goals, to be pursued simultaneously, not sequentially. This is the essence of “general and complete disarmament under effective international control” (GCD), which was adopted by the General Assembly at its 1978 first Special Session on disarmament as the world’s “ultimate objective”—GCD appears as such a goal in a dozen multilateral treaties (including the NPT and 5 regional nuclear-weapon-free zone treaties). The idea here is that both are needed, so that a nuclear-weapon-free world would not be a venue for endless conventional wars.

Unfortunately, the rule of law has evolved very unevenly in these fields—treaties have abolished chemical and biological weapons, yet there is still no convention outlawing nuclear

weapons, and very little treaty law governing conventional arms. Meanwhile, many initiatives addressing nuclear weapons are focused exclusively on regulating such weapons, rather than eliminating them outright. No treaty has yet required the destruction of a single nuclear warhead or bomb.

The process of achieving zero will likely involve many more actors than the nuclear-weapons states. The process is political and is evolving on three dimensions: (a) the nation state (including domestic institutional players); (b) the international diplomatic community (encompassing not just blocs of states like the “North”, the “South” or the Non-aligned Movement but also cross-cutting coalitions like the New Agenda Coalition, which had a significant impact at the 2000 NPT Review Conference); and (c) civil society (including both national and international networks like ICAN, Global Zero, and many others.)

With respect to the nation state, the nuclear-weapon states in particular, one of its most notable features is the absence of institutional infrastructures for implementing disarmament commitments—namely, disarmament agencies, legislation,

regulations, policies, and budgets. This is arguably the most difficult “institutional deficit” in the nuclear disarmament business. There are nuclear-weapons “complexes”, but no disarmament complexes. Yet disarmament negotiators will require such institutional support during the difficult process of undertaking disarmament negotiations; resources must be available to prepare responses to views of disarmament critics; and there must be a systematic effort to educate the public about the benefits of disarmament, and the risks of failing to pursue it.

At the level of the international diplomatic community, efforts are underway in many venues to promote disarmament norms. The IAEA is strengthening controls in safeguarding the peaceful uses of nuclear energy and materials. The International Committee on the Red Cross is emphasizing the abiding relevance of international humanitarian law, in particular vis-à-vis any use of nuclear weapons. The UN Office for Disarmament Affairs (UNODA) provides support for several multilateral conferences and events, including NPT Review Conferences (and sessions of their Preparatory Committees), as well as activities in the UN disarmament

machinery (First Committee, Disarmament Commission, and Conference on Disarmament).

Efforts have been underway at the UN to improve transparency in the nuclear disarmament process. On 24 October 2008, Secretary-General Ban Ki-moon called upon the nuclear-weapon states to provide additional information to the UN Secretariat on their arsenals, their holdings of fissile materials and specific disarmament achievements, with a view to ensuring the wider dissemination of such information to the public. On 8 December 2009, he reiterated this call, proposing the establishment of a “registry” for such purposes. At the 2010 NPT Review Conference, participants adopted by consensus a 64-point Action Plan that included Action 21, which invited the Secretary-General “to establish a publicly accessible repository” for information relating to the implementation of nuclear disarmament commitments. UNODA has established a place-keeper on its web site for this specific purpose, while the nuclear-weapon states continue their consultations on next steps to improve transparency.¹³

¹³ The site is located at <http://www.un.org/disarmament/WMD/Nuclear/Repository/>.

Meanwhile, civil society is making its own important contributions to the global nuclear disarmament process—by educating the public, by public advocacy, and by working to shape policy agendas. This encompasses far more than disarmament groups per se. It is not just the number of groups, but their variety that is significant, including: women; environmentalists; human rights activists; lawyers; doctors; city and national legislators; religious leaders; et al. Mayors for Peace has now gained the support of representatives from over 5000 cities.

In terms of how to move this process forward, there are several “Do’s” and “Don’ts” to consider.

One of the greatest challenges for disarmament advocates is to engage more actively with the substantive arguments used by critics of disarmament. A thorough review of anti-disarmament literature and statements yields essentially 12 arguments—the “dirty dozen”—that have been recycled over several decades. In brief summary, they argue the following about disarmament: (1) it is utopian/impractical; (2) it is

dangerous (e.g., will undermine NATO, encourage proliferation by states once covered by the nuclear umbrella); (3) more urgent priorities exist (typically, non-proliferation and counter-terrorism); (4) it is irrelevant (i.e., proliferation choices are not made in response to policies of the nuclear-weapon states); (5) it is best seen as an “ultimate goal” or mere “vision”; (6) it denies the great value of nuclear weapons in “keeping the peace”, sustaining order, deterring both nuclear and conventional wars; (7) it is unenforceable; (8) it is unverifiable; (9) it would open-up the spectre of large-scale conventional wars; (10) it denies that nuclear weapons are a cheaper way to prevent wars than relying on conventional arms alone; (11) it fails to recognize that nuclear weapons are only “dangerous” when they are in the “wrong hands”; and (12) it fails to concede that nuclear weapons “cannot be disinvented”.

Effective rebuttals to all of these would come from full satisfaction of the five multilaterally agreed standards for reliable disarmament agreements—namely, verification; transparency; irreversibility; universality; and bindingness. The fulfilment of these standards would go far indeed in clearing away most if not all leading anti-disarmament

arguments, thereby removing many of the political obstacles in the process of achieving global zero. Recent (and growing) efforts to frame any use of nuclear weapons as inherently inconsistent with international humanitarian law is also helpful in strengthen the “taboo” on both use and possession.

As for the “Don’ts”—these include arguments that actually make disarmament more difficult to achieve. These include: a proliferation of conditions/preconditions for disarmament to occur—some such conditions have included the prior achievement of “world peace”, a final solution to the “problem of war”, an end to all proliferation and WMD terrorism risks, solution of all regional disputes, and other such terms that serve only to postpone disarmament indefinitely. Other “Don’ts” include: referring to nuclear disarmament as an “ultimate goal” (a term the world community reserves for GCD); arguments that the “sole purpose” of nuclear weapons should be to deter nuclear attacks (which only serves to further legitimize possession, retention, and proliferation if not actual use); the pursuit of “stability at low numbers” as an end-state rather than a stepping stone to zero; building new nuclear weapons while “disarming” old ones; pursuing conventional

arms supremacy in a nuclear disarmed world (this assumes global acceptance of a global conventionally armed hegemon); issue actual or implied nuclear threats (e.g. “all options are on the table” for dealing with various disputes); acceptance of “virtual” arsenals (i.e. those that can be rapidly reconstituted) as a desirable end-state for disarmament (this violates the norm of irreversibility); refusal to develop national plans for achieving commitments (with timetables, budgets and relevant institutions); issue policy statements/declarations heralding the indispensability of nuclear weapons (e.g. NATO’s “supreme guarantee of security”, which serves to rationalize both possession and acquisition); and insisting on re-opening a debate over “whether” nuclear disarmament is a worthy goal.

In conclusion, “stability at low numbers” is no substitute for the peace and security of a world without nuclear weapons. As the NPT States Parties declared at their 2000 and 2010 Review Conferences: “the total elimination of nuclear weapons is the only absolute guarantee against the use or threat of use of nuclear weapons”.