



REFRAMING NUCLEAR DE-ALERT

Decreasing the operational readiness
of U.S. and Russian arsenals



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The EastWest Institute is an international, non-partisan, not-for-profit policy organization focused solely on confronting critical challenges that endanger peace. EWI was established in 1980 as a catalyst to build trust, develop leadership, and promote collaboration for positive change. The institute has offices in New York, Brussels, and Moscow.

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Cover photo: Lieutenant-Colonel Alexander Khabarov stands in front of a Tu-160 bomber at a military airbase in Engels some 900 km (559 miles) south of Moscow August 7, 2008. REUTERS/Sergei Karpukhin (RUSSIA)

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FOREWORD

Placing armed forces on some level of alert has been a basic tenet of military readiness for centuries, particularly in countries that have experienced surprise attacks. It is therefore no revelation that a significant part of the nuclear forces of the United States and the Soviet Union were on alert during the Cold War. But twenty years after the end of the Cold War, Russia and the United States continue to maintain most of their nuclear forces at the old levels of alert. It is time for a fundamental rethink about this practice, and for creative ideas about levels of operational readiness more suitable for the post-Cold War world and how they might be made operational.

Currently the United States has around a thousand nuclear warheads on alert on land-based intercontinental ballistic missiles (ICBMs) and submarine-launched ballistic missiles (SLBMs). Russia similarly maintains about 1,200 warheads on alert, nearly all of them on ICBMs.

Even during the Cold War, alert levels were not static and moved up or down depending on the security environments. But alert levels since then (after some degree of de-alerting, especially of bomber forces, in the early post-Cold War period) have remained immune to major changes in the later post-Cold War era. As one Russian expert admitted, Russia and the United States remain prisoners of a Cold War legacy.

It is against this backdrop that the EastWest Institute (EWI), in partnership with the Federal Department of Foreign Affairs of Switzerland and the New Zealand Ministry of Foreign Affairs and Trade, launched its project, “Reframing Nuclear De-alert: Decreasing the Operational Readiness of U.S. and Russian Nuclear Arsenal”. This project addresses the following questions:

1. What was the past experience among nuclear weapon states of reducing the operational readiness of their nuclear arsenals?
2. What is the principal critique of present approaches to decreasing the operational readiness of nuclear weapon systems and increasing decision-making time? What approaches might be acceptable to the United States and Russia? How might these ideas be operationalized?
3. What is the relationship between efforts to de-alert and efforts to disarm? Are they complementary?

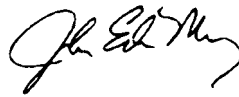
These questions were addressed at a seminar in Yverdon-les-Bains, Switzerland in June 2009 by technical experts, policymakers, military professionals and scholars from the United States and Russia. The discussion was further enriched by representatives from the non-nuclear-weapon states that sponsored the UN General Assembly Resolution titled Decreasing the Operational Readiness of Nuclear Weapons Systems (A/Res/63/41).

Discussions during the seminar reflected the view that there is no fundamental obstacle to ‘de-alerting’ provided the issue is not framed as a set of narrow, technical measures aimed at lowering the possibility of accidental, unauthorized, or inadvertent use. A broader view of ‘de-alerting’ could pave the way for a serious discussion on de-emphasizing the military role of nuclear weapons—for instance, by moving to retaliatory strike postures and doctrines instead of Cold War pre-emptive or “launch on warning” postures. This broader view would ensure that all relevant stakeholders, including the strategic communities in Russia and the United States, are drawn into the conversation on operational readiness of nuclear forces.

Such an approach may also offer a pathway to bring other nuclear weapon states into discussions on de-alerting. Once de-alerting is reframed along these lines several concrete steps become possible. For instance, as part of the START follow-on negotiations, Russia and the United States could examine how measures to reduce operational readiness can accompany the bilateral arms control process. Arrangements to share data and ensure the capability to destroy a rogue missile in flight could also be multilateralized.

This report, which reflects the rich debate not only between the United States and Russia but also the views of other non-nuclear weapon states, elaborates on how the issue can be reframed. More importantly, it outlines a series of practical steps that the United States and Russia might consider as they progress along the road to 'reset' their bilateral relations. Such steps are in line with U.S. and Russian efforts to break with the past and set a new and more cooperative course for the future.

EWI is grateful for the generous support of the governments of Switzerland and New Zealand as well as EWI's own core funders, which made this project possible. EWI also wishes to express its appreciation to everyone who participated in the process and for their creative thinking. At EWI we constantly look to reframe issues in a way that makes new practical breakthroughs possible. Our hope is that this report will be a step in that direction and will encourage the United States and Russia to move to levels of operational readiness which are more compatible with today's strategic realities and not relics of the Cold War.

A handwritten signature in black ink, appearing to read "John Edwin Mroz". The signature is fluid and cursive, with the first letters of each name being capitalized and prominent.

John Edwin Mroz
President and CEO
EastWest Institute

EXECUTIVE SUMMARY

- Nearly twenty years after the end of the Cold War, Russia and the United States continue to maintain hundreds of nuclear weapons capable of striking the other side, and to have at least some of these nuclear forces at Cold War levels of alert, that is, ready to fire within a few minutes of receiving an order to do so.
- Even during the Cold War, alert levels were not static and moved up or down in step with changes in the strategic and tactical environments. While the operational readiness of some weapon systems has been reduced, there has been no major change in the readiness levels of most of the nuclear weapon systems in the post-Cold War era. This is in considerable part because Russia and the United States believe that despite fundamental changes in their overall relationship, vital interest requires maintaining a high level of nuclear deterrence.
- The post-Cold War experience also demonstrates that alert levels can be reduced and measures can be taken to reduce the risk of accidents or unauthorized takeover of nuclear weapons. Further measures could be taken to reduce operational readiness of nuclear arsenals. U.S. and Russian experts alike stressed survivability as a key element in the acceptance of these measures because of its importance to maintaining deterrence.
- Cold War legacy postures under which thousands of weapons are kept on high readiness can be altered through top-down policy initiatives, as was the case in the early 1990s with one class of nuclear weapons.
- Technical issues related to the peculiar “ready” character of land-based ICBMs can be resolved by bringing designers into discussions on decreasing operational readiness of nuclear weapons. There was a sense that technical solutions to the problems of nuclear risk reduction are available and can be multilateralized. Information sharing can help implementation of these solutions.
- Concerns over “re-alerting” races and vulnerability of “de-alerted” forces to conventional or nuclear strikes during “reversal” can be addressed through survivable forces, dialogue, and confidence building.
- Other nuclear weapon states apparently have alert practices that differ from those of Russia and the United States. It was debated whether this state of affairs can be ascribed to an absence of nuclear war fighting capabilities or to a different assessment of the post-Cold War nuclear security environment. There was a sense that nuclear doctrines and alert practices of different nuclear weapon states cannot be analyzed in a vacuum and must be evaluated as parts of a larger political and security framework.
- Non-nuclear weapon states’ experts forcefully asserted the legitimate interest their states have in the issue and underlined the practical and constructive approach of the U.N. General Assembly resolution on reducing operational readiness of nuclear forces.

- Non-nuclear weapon states say that lowering of the operational status of nuclear weapons would both reduce the risk of accidental or unintended nuclear war and provide a much-needed practical boost for disarmament and nonproliferation. Decreasing the operational readiness of nuclear weapons would be a highly desirable confidence-building measure between nuclear weapon states and non-nuclear weapon states. It would also be a welcome step in the lead-up to the 2010 Non-Proliferation Treaty (NPT) Review Conference.
- The principal objection to decreasing operational readiness of nuclear weapons as commonly understood has been that it seeks to address a problem that does not exist. Even if it does exist in some instances, it can be addressed by technical and organizational means updated to cover current threats such as nuclear terrorism. Furthermore, the remedy itself could end up undermining nuclear deterrence and strategic or crisis stability.
- The insight that emerged during the meeting was that the above objection flows from a narrow view of de-alerting as meaning measures that make it physically impossible to promptly launch an attack on order. Such a view also leads to a somewhat excessive focus on verification of technical measures, which ends up giving an easy argument to the opponents of de-alerting—that it is not verifiable and therefore should not be attempted.
- There are no fundamental obstacles to many useful measures of decreasing operational readiness of nuclear weapons, provided the issue is not framed narrowly. De-alert has to be seen not only as a technical fix but also as a strategic step in deemphasizing the military role of nuclear weapons, in other words, moving to retaliatory strike postures and doctrines instead of legacy preemptive or “launch on warning” postures. The ongoing U.S. Nuclear Posture Review (NPR) offers an opportunity for such a perceptual shift.
- If decreasing operational readiness of nuclear weapons is reframed in this manner, several concrete steps become possible:
 - As part of the START follow-on negotiations, Russia and the United States could examine how measures to reduce operational readiness can accompany the bilateral arms control process.
 - Both Russia and the United States could further strengthen controls against unauthorized action, takeover, and tampering; further increase the capability of warning systems to discriminate real from imagined attacks; and enhance the survivability of their forces and their command and control systems.
 - Arrangements related to data exchange and ensuring a capability to destroy a “rogue” missile in flight could be multilateralized, at least in terms of sharing data, to bring other declared nuclear weapon states into the process.
 - Multilateralization of institutions such as the Joint Data Exchange Center may also have collateral benefits in the area of space security.
 - The premise of maintaining nuclear deterrence between Russia and the United States should not be considered immutable. A dialogue on legacy nuclear postures and doctrines in the Russia-U.S. context may trigger a broader dialogue among relevant states on reducing the salience of nuclear weapons, thus facilitating progress on disarmament and nonproliferation.

I. Introduction

During the Cold War, the two main protagonists maintained a significant portion of their nuclear weapons on high alert so neither side would be caught by surprise. With the exception of bombers and non-strategic weapons this posture has continued more or less unaltered to the present day. Since the end of the Cold War, a number of former officials and statesmen who dealt with nuclear weapons, independent commissions such as the Canberra Commission, and governments have called for “de-alerting.” Reducing the operational status of nuclear weapons was one of the thirteen steps agreed at the 2000 NPT Review Conference. Since 2007, Chile, New Zealand, Nigeria, Sweden, and Switzerland, later joined by Malaysia, have been tabling a resolution at the U.N. General Assembly titled “Decreasing the Operational Readiness of Nuclear Weapons Systems.” The resolution calls for further practical steps to be taken to decrease the operational readiness of nuclear weapons systems, with a view to ensuring that all nuclear weapons are removed from high-alert status. India has been tabling a similar resolution, titled “Reducing Nuclear Danger,” since 1998. More recently, in a January 2007 op-ed in *The Wall Street Journal*, four eminent U.S. statesmen—George P. Shultz, William J. Perry, Henry A. Kissinger, and Sam Nunn—advocated “a series of agreed and urgent steps that would lay the groundwork for a world free of the nuclear threat.” The first of these steps is changing the Cold War posture of deployed weapons to increase warning time and reduce the danger of accidental or unauthorized use of nuclear weapons.

There is a dual thread running through all of the previous initiatives to lower the operational status of nuclear weapons: reducing perceived nuclear danger in the short term and facilitating further progress on nuclear disarmament, arms control, and nonproliferation in the long term.

While there are many observers, particularly outside the nuclear weapon states, who dispute the legitimacy of the deterrent mission Russia and the United States have assigned their nuclear forces, the premise of this project has not been to focus on deterrence but to examine what dangers, if any, current postures present and what measures could usefully be taken to reduce or, if possible, eliminate those dangers. These dangers include the possibility that an unintended or ill-advised nuclear attack could result from:

1. “pure accident,” that is, a technical failure or operator error that results in a launch;

2. a usurpation of authority by subordinate military units or terrorists;
3. a misinterpretation of warning data as the start of an attack; or
4. a premature and ill-considered response to an actual attack.

Russia and the United States, like everyone else, have a direct security interest in avoiding all of these outcomes.

The first objective of this report is to define the issue to reconcile differing views of the de-alert concept that may themselves hinder attempts to reduce the readiness of nuclear weapons. A second objective is to examine previous approaches to decreasing the operational readiness of nuclear weapons, especially in the Russia-U.S. context, in a broad framework of nuclear weapons doctrine and strategy. The final objective is to explore alternative ideas related to decreasing operational readiness that have worked or might work for nuclear weapon states, and to seek areas of consensus on operationalizing these ideas, first among U.S. and Russian policy makers.

These objectives were addressed through a set of discussion papers written by Russian and U.S. experts and a seminar titled “Re-framing De-alert” at Yverdon Les Bains, Switzerland, on June 21–23, 2009.¹ All experts spoke in their personal capacity. This report seeks to reflect the areas of convergence and divergence that emerged during these conversations. Without implying consensus on one or another specific action for the future, it also seeks to provide guidance to better frame the issue and pursue specific policy options in a reframed setting.

Participating experts support the overall outcome even though they may not necessarily support a specific course of action or opinion mentioned in the report.

II. Defining the Issue

“De-alerting” has traditionally been conceived as the implementation of reversible physical changes in a nuclear weapon system that significantly increase time between decision to use and launch. The six-nation-sponsored U.N. General Assembly resolution A/RES/63/41 of January 12, 2009, does not explicitly define de-alerting. In fact it does not use the term. Instead it refers in Operative Paragraph 1 to “further practical steps to be taken to decrease the operational readiness of nuclear weapon systems.” Elsewhere

¹ Program and papers available at <http://www.ewi.info/reframingin-nuclear-de-alert-0>.

in the resolution it uses the term “lowering of operational status.” It also uses the term “nuclear weapons on high alert.” This report uses “de-alerting” throughout as shorthand for “decreasing operational readiness” of nuclear weapons.

The challenge is to define “de-alerting” in a way that captures its larger context but retains the focus on practical, immediate steps. The challenge also is to avoid conveying an excessively alarmist or pejorative view of current deployment practices while still capturing the risks associated with heightened alert postures. A sober discussion of de-alerting requires clearing what has often been a conceptual minefield. For this we have to first define the key terms associated with the deployment and planned use of nuclear weapons.

Experts identified the terms “launch on warning,” “launch under attack,” and “otvetno-vstrechnyi udar” as the ones most frequently used in English and Russian literature on “de-alerting.” The U.S. Department of Defense defines “launch under attack” (LUA) as “execution by the President of the Single Integrated Operational Plan forces subsequent to tactical warning of strategic nuclear attack against the United States and prior to first impact.”² One of the definitions used by a U.S. expert during the discussions in this project—a responsive attack ordered after confirmation that a major attack is actually in progress—has essentially the same meaning. The same expert defines “launch on warning” (LOW) as “an attack ordered on the basis of a determination that an adversary was committed to a nuclear attack on the U.S. but before the attack had actually started.” While the U.S. government does not use the term “launch on warning,” the Pentagon refers to this option as “prompt launch.” A key issue in these definitions is the nature of the warning, tactical or strategic, and the nature of sensors conveying warning of the attack. Thus LOW has been defined differently at times as an attack ordered and carried out after early-warning sensors indicate an incoming strike but before enemy missiles hit their targets. However, such a definition of LOW would blur the distinction with LUA and has therefore not been considered in this discussion.

In Russia, the Strategic Rocket Forces define the term “otvetno-vstrechnyi udar” (OVU) as “a form of responsive measures of Strategic Nuclear Forces ordered after analysis of all reconnaissance and early warning data so that the transmitting of launch orders to a major portion of

delivery systems and the launch of those systems are carried out before the first impact.”³ This is similar to the U.S. term LUA but the word “all” conveys a sense of comprehensiveness of information inflow. A Russian expert calls OVU “retaliatory offensive strike”—“we are not going to be first but we are not going to be second, either.” The U.S. definition of LOW above corresponds to the Russian term “uprezhdayuschii udar,” or preemptive strike.

As regards the definition of “de-alerting” itself, while the nuclear safety and stability aspects of doctrines and deployments have been around for almost as long as nuclear weapons, the idea of “de-alerting” gained prominence in the 1990s after the demise of the Soviet Union. The question debated by Bruce Blair, Harold Feiveson, Frank von Hippel, Alexei Arbatov, Vladimir Dvorkin, Sergey Rogov, Viktor Koltunov, and many others was whether after the end of the Cold War the two major nuclear powers needed to maintain several thousand nuclear weapons on high alert.⁴ In these discussions “de-alerting” has been defined as implementing some reversible physical changes in a weapon system that would significantly increase time between decision to use the weapon and the actual moment of its launch. Thus while the problem is correctly diagnosed as related to issues of doctrine and deployment, the solution offered is defined more narrowly. The spectrum of measures suggested includes disabling U.S. intercontinental ballistic missiles (ICBMs) by pinning open their safety switches and disabling Russian road-mobile ICBMs so that they cannot be activated for hours, covering missile silos with several meters of earth, removing nose cones of missiles, removing guidance or control modules from missiles, removing tritium bottles from boosted and thermonuclear warheads so that they cannot be used for first strike, and removing warheads completely and storing them separately from the delivery systems.

An important consideration while defining “de-alerting” is the notion of “hair trigger alert.” According to Bruce Blair, U.S. and Russian forces remain configured to launch on warning—firing forces en masse before the anticipated arrival of incoming enemy missiles.⁵ He has called this

2 Slocombe, Walter. “De-alerting: Diagnoses, Prescriptions and Side Effects.” Presented at EWI’s seminar Re-framing De-Alert: Decreasing the Operational Readiness of Nuclear Weapons Systems in the U.S.-Russia Context. June 21-23, in Yverdon, Switzerland. <http://www.ewi.info/system/files/Slocombe.pdf>.

3 Miasnikov, Eugene, General (Ret.) Viktor Esin, General (Ret.) Viktor Koltunov. “Comments on U.S. Discussion Papers: On Definitions in the Discussion of De-Alerting,” Presented at EWI’s seminar Re-framing De-Alert: Decreasing the Operational Readiness of Nuclear Weapons Systems in the U.S.-Russia Context. June 21-23, in Yverdon, Switzerland. http://www.ewi.info/system/files/Comments_Miasnikov_Esin_Koltunov.pdf.

4 See, for example, Blair, Bruce G., “Global Zero Alert for Nuclear Forces,” (Washington, D.C.: Brookings Institution Press, 1995) as well as Harold A. Feiveson, ed., *The Nuclear Turning Point* (Washington, D.C.: Brookings Institution Press, 1999).

5 Blair, Bruce G., “A Rebuttal of the U.S. Statement on the Alert Status of Nuclear Forces,” Center for Defense Information, November 6, 2007, <http://www.cdi.org/program/document.cfm?documentid=4135>.

a “hair trigger quality.”⁶ Others contend that there is nothing automatic or inevitable about the launch of alert missiles. The chief of staff of the U.S. Air Force, General Norton Schwartz, has said “there is rigorous discipline and process involved, and it is anything but hair trigger.”⁷ The U.S. president must decide to launch the missiles and must transmit authorization codes to launch crews who then confirm their authenticity. Completing the launch sequence then requires simultaneous actions of two crew officers (three in case of the Russian forces). Because of a mix of physical locks, technical safeguards, and procedures that require human decision making and participation, the systems have been described as more like a revolver tucked away in its holster with its safety catch on than a gun cocked and ready to fire.

Another concept related to but not synonymous with de-alerting is “de-activation.” De-activation or downloading was used for the first time in START II and means dismounting the warheads from ballistic missiles and keeping them in special storage. Recall that Russia and the United States agreed in 1997 to de-activate by the end of 2003 (later extended to 2007) the missiles to be eliminated under START II. It may also be recalled that “activation” in the practice of the U.S. Army used to denote a peacetime, nonbelligerent activity of acquiring a new weapon system and training with it at the unit level, whereas deployment implied a more warlike posture where weapons are actually placed and made operational for use at a forward location. The de-activation concept is crucial to understanding the link between de-alerting and disarmament. Another related term is “operationally deployed warheads.”

Discussions during the project showed that the issue of operational readiness of nuclear weapon systems cannot be considered in isolation from larger conceptual issues of doctrine and deployment. Thus a narrow definition of de-alerting based on physical measures may not capture the complexity of issues at stake. At the same time, as a purely practical measure and based on the historical experience of operational readiness of nuclear weapon systems, it may be possible to define different levels of alert. It should be noted that the categorization below is a simplified heuristic for appreciating differences in levels of alert across time and across nuclear geography. In actual practice, while there may be different time frames for delayed launch based on the operational readiness of the weapons, they

may not be referred to as different levels of alert.

High alert	ready to fire within minutes
Medium alert	ready to fire within hours
Low alert	ready to fire on several days notice
De-alerted*	cannot be fired for a long period, for example, weeks

III. Past Russian and U.S. Experience Decreasing Operational Readiness of Nuclear Weapon Systems

With nuclear possession leading to considerations of deployment and use, U.S. and Soviet nuclear planners theoretically conceived of three possible general scenarios: preventive (first) strike, “launch on warning” strike, and retaliatory strike. During the Cold War both settled on “launch on warning” as the lynchpin of nuclear deterrence and both maintained a portion of their deployed nuclear weapons on alert to respond to these various scenarios.

Historically, alert levels of nuclear weapon systems have changed in response to changes in the political, economic, and security environment. From 1959 to 1967, 50 percent of the U.S. strategic bombers and air fueling aircraft were on a fifteen-minute alert. Economic and other constraints linked to the Vietnam War brought alert levels of bombers down to 33 percent after 1967. Alert levels of B-52 bombers and submarine-launched ballistic missiles (SLBMs) went up in the United States in 1969 because of the possibility of a wider Sino-Soviet conflict. They went up again in 1973 during the Arab-Israeli war. Today, all U.S. and Russian strategic bombers are off alert.

In comparison to bombers, alert rates of ICBMs stayed relatively stable but high at around 97–99 percent. Alert rates of SLBMs also stayed largely constant despite some changes. SLBM-equipped submarines would either be in port or deployed at sea. Once deployed, they would go to their patrol areas. Compared to ICBMs, whose “natural” state is to be on alert in a silo with the power on, both bombers and SLBMs are relatively easy to “de-alert,” the latter by keeping them in port (even though Russian SLBMs could be launched from ports).

Specific manners of deployment by an adversary have

⁶ Ibid.

⁷ Grossman, Elaine M., “Top U.S. General Spurns Obama Pledge to Reduce Nuclear Alert Posture,” *Global Security Newswire* (February 27, 2009) http://gsn.nti.org/gsn/nw_20090227_8682.php.

also affected alert levels over time. When the Soviet Union deployed Yankee-class submarines to the Atlantic Ocean, it affected the alert levels of bombers based in the eastern United States. When the submarines got to within a certain distance of the coast, crew movements would be restricted. As they got closer, the crews of bombers on alert would sit in the planes. As they approached certain limits, the bombers would be repositioned to the hold line. The Yankee deployments even forced a modification in the B-52 bomber. Instead of pyrotechnic cartridges in engines 4 and 5, the bomber was modified to install these cartridges in all eight of the engines to save minutes of reaction time. The Strategic Air Command (SAC) commander could get the bombers ready and even launch them under certain threat circumstances while waiting for positive presidential control for sending them to their targets. Alert duty was “pulled” routinely. During a seven-day alert tour for a bomber crew, the alert Klaxon would go off twice. At that point the crew would go to the plane and start the engine and wait for a coded radio message.

During the Vietnam War, the U.S. adhered to only a notional one-third alert deployment for bombers, as many planes were simply left on the so-called Christmas tree pads without the crews, which were in short supply. Thus constraints on availability of human or economic resources also affected levels of operational readiness. This became an important factor in the case of the Soviet Union, and later Russia in the early 1990s. Mishaps played a role as well. For example, after several accidents involving strategic bombers, the United States took these bombers off airborne alert in 1963. Conversely, a recent incident in which cruise missiles armed with nuclear weapons were mistakenly flown on a bomber across the U.S. has been attributed to lowered alert levels, less frequent training, and a reduced focus on the nuclear deterrence mission.

In the understanding of U.S. practitioners of deterrence, the above are all examples of changes in tactical alert that relate to specific elements of the nuclear triad—bombers, land-based missiles, and submarine-launched missiles. Apart from tactical alert one must take into account strategic alert levels defined in the case of the U.S. by the Defense Readiness Condition (DEFCON) level. This level varies from 1 to 5, with the latter being the day-to-day peacetime level of alert. For most of the Cold War, the strategic alert level stayed at DEFCON 4, close to the peacetime level of alert. Practitioners note that since the word “alert” is not used in U.S. Presidential Decision Directives (PDDs), it is more of a “tactical” issue, better left to the sound judgment of the practitioners.

Alert levels have also been reduced in a cooperative

framework informally coordinated or formally negotiated. On September 27, 1991, President George H. W. Bush announced that the United States would withdraw all ground-launched short-range nuclear systems from bases abroad and cease deployment of tactical nuclear weapons on surface ships, attack submarines, and land-based naval aircraft during “normal circumstances.” Soviet president Mikhail Gorbachev responded on October 5, 1991, with measures that included separation of nuclear warheads from air-defense missiles and putting those warheads in central storage. These so-called Presidential Nuclear Initiatives (PNIs) were a response to the rapidly evolving political situation in the Soviet Union and the changed context of U.S.-Soviet relations. In 1994, the U.S. and Russian presidents signed a Joint Statement on Mutual De-targeting agreement that entered into force on May 30, 1994. In recent years, the United States, Russia, and the United Kingdom have announced that they have modified procedures so that if a nuclear-armed missile were launched it would go to an uninhabited part of the ocean and not a target on land. A Russian expert pointed out that Russian ICBMs in the “zero launch” mode cannot be launched at even the designated targets.

Today the United States keeps roughly 1,000 nuclear warheads on alert atop land-based ICBMs and SLBMs. This includes the warheads on all 450 Minuteman III ICBMs and those on perhaps four Trident submarines on station at sea. Although there is nothing automatic about the process, the U.S. president could launch these missiles promptly after receiving warning of an impending attack. The time to launch these missiles could be as short as four minutes for ICBMs and twelve minutes for SLBMs. Russia retains approximately 1,200 warheads on alert, nearly all on ICBMs. France and the United Kingdom together keep about 112 warheads on alert.

The sense during discussions on historical levels of nuclear alert was that placing military forces on some level of alert status has been a basic tenet of military readiness for centuries. It is therefore no surprise that parts of the nuclear forces of the United States and Soviet Union were placed on alert during the Cold War. What is surprising, however, is that nearly twenty years after the end of the Cold War, Russia and the United States continue to have at least some of their nuclear forces at the same levels of alert. Even during the Cold War, alert levels were not static and responded to changes in the strategic and tactical environments. However, they have remained immune to major change in the post-Cold War era. It is useful from a historical perspective to examine why alert levels were reduced when they were reduced during the Cold War.

This may provide insights into how to counter the current inertia to change in alert postures.

IV. Situation in Other Nuclear Weapon States

Was the Soviet-U.S. experience with nuclear alert during the Cold War unique? Did China, France, and the United Kingdom also place a part of their nuclear forces on alert? Has their posture continued in the same manner in the post-Cold War era as it has in the Russia-U.S. context? Do Russian-U.S. nuclear force postures interact only in a bilateral context or are they part of a larger context?

As seen in the previous section, both Russia and the United States believed that keeping a large portion of their strategic forces on alert is essential to deterrence and strategic stability. China, on the other hand, is said to keep a portion of its missiles on low alert with the warheads separated. Even during the Cold War, Chinese ICBMs would sit in their silos unfueled and without their warheads. China thus seems to be willing to live with this seeming vulnerability even though it is not clear if the situation is likely to last. The reasons for this relaxed deployment may be partly technological (China may not possess the counterforce capabilities of the U.S. and Russian variety) and partly organizational (the scientific establishment rather than the military has traditionally exercised more influence in nuclear weapons development and deployment). However, the most important reason may be political, as nuclear weapons are viewed as weapons of coercion and not use. The mere fact of possession creates parity and achieves almost all the deterrence China desires.

During the discussions another view of China's deployment was presented. Per this view, even though China may not possess nuclear war fighting capabilities on par with Russia and the United States, it does have a small number of strategic systems on high alert twenty-four hours a day. The 2nd Artillery, in charge of nuclear weapons, may have thirty ICBMs on continuous alert, including twelve liquid-fueled DF5s with 2-megaton warheads ready to launch in approximately thirty minutes as well as eighteen solid-fueled DF31 missiles in silos on a twenty-minute alert.

France has taken steps in recent years to reduce the operational readiness of its nuclear weapons to the "lowest possible" level consistent with the maintenance of the credibility of its deterrent. It has eliminated its land-based nuclear missiles. The United Kingdom has reduced the

alert status of its Trident strategic system, which is not targeted and is on several days' notice to fire. It has eliminated air-delivered and land-based nuclear forces in the post-Cold War years and now its nuclear forces are based on a single leg (sea-based) of the nuclear triad.

India, which subscribes to a retaliatory no-first-use doctrine, is understood to keep warheads separate from delivery systems. Pakistan is also understood to keep warheads separate from missiles. These deployment practices are unilateral decisions and could be ascribed to absence of early-warning systems or other technological gaps compared with Russia or the United States. They could also be ascribed to considerations of control and safety. Above all, as in the case of China, they could be ascribed to a different doctrinal view of nuclear weapons under which leaders do not want nuclear weapons to be very easily accessible. Not enough is known about Israeli nuclear policies to warrant an assessment of alert practices, nor was this discussed at the Yverdon meeting.

It may be argued that in certain regional scenarios there could be a race to re-alert during a crisis. If an adversary is watching, there may be a temptation to interfere with the other's reconstitution process, even with conventional weapons. Survivability of the hardware being reconstituted, of command, control, and communication systems, and of key personnel becomes important in such cases. However, such a view of crisis stability underplays the more political view that regional actors have of nuclear weapons (coercion and bargaining, including bargaining involving external powers), as opposed to a military view of nuclear weapons, which emphasizes their military utility in crisis or in conflict.

The brief discussion on the alert practices of other nuclear weapon states showed a clear distinction between the practice of Russian and U.S. nuclear forces and those of others in the post-Cold War era. Whether this distinction can be ascribed to an absence of nuclear war fighting capabilities or a different assessment of the post-Cold War nuclear security environment was debated. Notably in the case of China, it was also debated whether its seemingly different alert practices flowed from a different doctrinal view of nuclear weapons. There was a sense that nuclear doctrines and alert practices of different nuclear weapon states cannot be seen in a vacuum and must be evaluated as parts of a larger whole. One Russian expert felt that while they may say that their experience and situation are unique, the United States and Russia are "trapped" in their legacy postures. They would need a broader framework to be able to escape this trap.

V. Current Russian and U.S. Perspectives

As noted above, Russia and the United States maintain a rough total of around 2,200⁸ nuclear weapons on high alert on ICBMs or SLBMs, a continuation of the “launch on warning” legacy from the Cold War. Russian and U.S. experts tend to look at the issue of de-alerting from the perspective of, first, deterrence and doctrine; second, assessment of the risks that “de-alerting” seeks to reduce; third, the cost or side effects of “de-alerting,” issues of survivability and crisis stability; and finally, broader issues of disarmament and strategic stability.

Russian perspectives

Deterrence and doctrine:

Russian experts note that “launch on warning” is especially important for Russia because it keeps most of its nuclear warheads on silo-based ICBMs. While Russia does have mobile ICBMs, they stay in stationary shelter most of the time, making them vulnerable to a first strike. Russian experts say that although a variety of techniques to reduce launch-readiness levels of strategic nuclear forces have been discussed, removing warheads from missiles and placing them at storage at distant locations from missile deployment sites is considered to be the primary one. Other means are either ineffective and cannot be verified or are unfounded from a technical point of view. They hold that removing warheads from missiles would mean “depriving nuclear forces of their primary role—the role of deterrence.”⁹

However, proponents of de-alerting, and particularly proponents in the United States, find Russia’s reliance on prompt launch under attack or on warning most troubling in the current circumstances when the Russian radar system will give only fifteen minutes’ warning of an attack. They believe that Russia can meet its deterrence goals without a high-alert posture. The fact that Russian SLBM submarines are mostly in port hints at this possibility.

⁸ This may be the inherent potential of the forces and not necessarily the daily practice.

⁹ Koltunov, General Victor (Ret.), Eugene Miasnikov, and Leonid Ryabikhin, “De-alerting: Decreasing the Operational Readiness of Strategic Nuclear Forces.” Presented at EWI’s seminar Re-framing De-Alert: Decreasing the Operational Readiness of Nuclear Weapons Systems in the U.S.-Russia Context, June 21-23, in Yverdon, Switzerland. <http://www.ewi.info/system/files/RyabikhinKoltunovMiasnikov.pdf>.

Even if these submarines are more vulnerable to “a bolt from the blue” strike than would be submarines on patrol, such a strike is not probable today and Russia has sufficient invulnerable forces, which could be further dispersed in a crisis, to ensure retaliation. Large numbers of missiles are not required to survive to ensure deterrence.

Risk assessment:

Russian proponents of de-alerting state that targeting one another with high-alert nuclear forces poses high risks when Russia and the United States are building a strategic partnership. A combination of alert forces, “launch on warning,” and a weak early warning system increases the possibility of accidental or inadvertent nuclear war. In larger terms the Russia-U.S. relationship will remain adversarial and stunted as long as highly alert nuclear weapons remain deployed in “launch on warning” postures.

Russian opponents of de-alerting assert that neither country’s systems are targeted at the other; in fact, high-alert levels have not prevented the two countries from building a strategic partnership. Nuclear weapons are under strict technical and organizational control, which excludes the possibility of accidental or unauthorized use. “The issue of the possibility of an ‘accidental’ nuclear war itself is hypothetical. Both states have developed and implemented constructive organizational and technical measures that practically exclude launches resulting from unauthorized action of personnel or terrorists. Nuclear weapons are maintained under very strict system of control that excludes any accidental or unauthorized use and guarantees that these weapons can only be used provided that there is an appropriate authorization by the national leadership.”¹⁰

Furthermore, the two countries have taken bilateral steps to reduce nuclear risk. These include the 1963 Hot Line, the 1971 agreement on measures to reduce the threat of nuclear war, the agreements on pre-launch notification of ballistic missile tests and on Nuclear Risk Reduction Centers, as well as the 1998 and 2000 agreements on the establishment of Joint Center for the Exchange of Data from Early Warning Systems and Notification of Missile Launches (JDEC). The JDEC could not be operationalized due to a number of objective and subjective difficulties, including secrecy-related issues. Nonetheless, the concept remains potent. Apart from bilateral exchange of information, ballistic missile and satellite-launch-vehicle (SLV) launches of third parties could be covered by the JDEC.

¹⁰ Ibid.

Costs of de-alerting, survivability, and crisis stability:

Russian opponents of de-alerting believe that de-alerting measures are not only superfluous but may actually have negative effects. They will deprive nuclear forces of their primary objective, which is deterrence, thus impacting strategic stability negatively. De-alerting may undermine the morale of personnel that maintain nuclear weapons. It would also have significant economic costs.

De-alerted weapons in storage would be an attractive target for a first strike, including with conventional weapons. Improvement in precision strike capabilities to a few tens of meters of accuracy implies that Trident missiles can be used to strike any place on earth within an hour; the dynamic of precision implies that the link between conventional and nuclear forces will only strengthen over time. When reducing operational readiness, “the sides will have to develop measures that ensure rapid reconstitution of their strategic forces in case of conflicts (preparation of reserve transport and load capabilities, roads and supporting infrastructure, personnel, etc.). These measures will also cause extra costs but what is more important, one may not exclude a possibility that reconstitution time will be different for the two sides. A side that brings back its readiness status earlier and gains advantage by doing so may seize the opportunity to strike first, which will obviously lead to the creation of a very dangerous situation. In other words, de-alerting may provoke a dangerous reconstitution race, which may cause a situation worse than one that existed before the launch readiness was decreased. Ensuring symmetry (equality of time for reconstitution) and implementation of control measures at the same time is almost an insoluble task. Besides that, one cannot rule out preventive measures by an adversary (diversion, sabotage) hindering from rapid reconstitution of operational readiness of missile systems. There exists also a problem of excluding covert reconstitution of alert status of forces.”¹¹

On the other hand, it was argued that concerns related to physical separation of warheads and delivery systems could be mitigated if forces are survivable. Furthermore, de-alerting measures need not necessarily be transparent; this would have value in diminishing risks of high alert and little of the risks that opponents of de-alerting worry about. The putative impact of de-alerting on morale of missile crews needs to be studied further. As one expert pointed out, his experience of talking to B-52 and missile

crews is that morale would be enhanced by de-alerting.¹² Linking nuclear de-alerting and conventional disarmament may not be helpful because conventional attacks take months to prepare as compared to nuclear attacks. Concern of conventional attacks on nuclear-tipped missiles could be exaggerated. “What an act of folly for U.S. to attack nuclear missiles with conventional missiles, including cruise missiles!”¹³ Finally, the dangers of a re-alert race may be exaggerated if 1) some part of strategic force is survivable, and 2) not all of the de-alerting measures are transparent.

De-alerting, disarmament, and strategic stability:

Russian experts believe, “If the purpose is further improvement of international security and strategic stability, one should achieve an equitable agreement on further irreversible and deeper cuts of the U.S. and Russia’s strategic nuclear arsenals of the sides. Such an agreement needs to be based on the principle of equal security, and it should include confidence building, transparency, predictability, verification measures and other elements relevant to a full-scale agreement. If such an agreement is achieved, de-alerting measures may play a useful role as an interim step to elimination of strategic weapons subjected to cuts under the agreement.”¹⁴ Russia and the United States have an opportunity to “reset” their relations and the two presidents have agreed to negotiate a new START agreement, which Russia will consider in connection with U.S. plans to further expand its antiballistic missile (ABM) system and deploy it in Europe. De-alerting can be a useful interim step in the elimination of strategic weapons covered by such an agreement but it cannot be an end in itself.

In short, most Russian experts consider that the principal objective should be to preserve strategic stability. Nuclear risk reduction should not be mixed up with reduction of alert; the two are different even though they may be complementary. Thus, while Russian experts do not reject the idea of de-alerting in principle, they believe that it should be based on certain principles such as maintenance of strategic stability and equal security. It should also be phased properly, with Russia and the United States adopting de-alerting measures in the first phase, and China, France, the United Kingdom, and other nuclear powers

¹¹ Ibid.

¹² Feiveson, Harold. Presented at EWI’s seminar Re-framing De-Alert: Decreasing the Operational Readiness of Nuclear Weapons Systems in the U.S.-Russia Context, June 21-23, in Yverdon, Switzerland. http://www.ewi.info/system/files/Feiveson_Harold.pdf.

¹³ Ibid.

¹⁴ Ibid

following in latter phases. Parallel doctrinal changes may be required in all nuclear weapon states, while regional non-nuclear weapon states may have to strengthen their commitments to nonproliferation.

U.S. Perspectives

Despite the variety of U.S. perspectives expressed during the project, several common elements were discernible. First, U.S. experts believe that de-alerting is a policy issue and cannot be delegated to those who deal with nuclear weapons on a day-to-day basis. At its heart this is an issue of survivability for upholding deterrence; whether survivability is ensured through rapid reaction or otherwise is a policy choice. Second, cooperative action, principally exchange of information, can play an important role in reducing nuclear risks beginning with the Russia-U.S. bilateral relationship. Third, the key issue today is not so much accidental nuclear war but rather increasing decision time available to policy makers in an era when they do not need to rush.

Deterrence and doctrine:

During the Cold War the United States maintained a portion of its nuclear forces on high alert, ready to retaliate to a Soviet attack before the first nuclear weapons exploded on U.S. nuclear forces or command and control centers. The belief was that this enhanced both crisis stability and deterrence. Some U.S. experts assert that even during the Cold War years such a posture did not imply that the United States would automatically launch its forces promptly. Given that a large portion of the U.S. nuclear forces were maintained on invulnerable submarines, the president could afford to wait for confirmation of warheads exploding on U.S. soil or even until after the attack was over to retaliate. At the same time, according to this perspective, the Russia-U.S. bilateral relationship has not sufficiently evolved after 1991 to change the fundamentals of nuclear deterrence between the two countries. Hence, instead of merely taking weapons off alert, the two should pursue policies and develop mechanisms to change their political and military relationship, which in turn would facilitate de-alerting.

U.S. proponents of de-alerting argue, on the other hand, that it is doubtful that the U.S.-Russia deployment configuration meets the technical requirements of deterrence stability.

“Institutionalized policy in the United States currently

envisages indefinite continuation of legacy operational practices under which American deterrent forces:

- systematically prepare massive attack plans independent of any immediate circumstance of possible use;
- direct those attack plans primarily against Russian and Chinese military forces;
- maintain thousands of weapons on immediately available alert status capable of covering primary targets.

“It has long been recognized that those forces are technically configured and operationally inclined for preemption, despite the commitment to retaliation required by formal deterrence doctrine, for the basic reason that the priority counterforce purposes of the underlying attack plans can only be achieved if most of their specific missions are preemptive in character. Given the disparity in investment, the United States capacity for preemption will continuously improve, forcing Russia into increased reliance on rapid reaction of its deterrent force and even anticipation of attack in order to assure itself that an American preemptive attack could not be completely decisive.”¹⁵

A third U.S. perspective on de-alerting suggests that “as long as nation-states are unable to agree on measures that will verifiably eliminate all nuclear weapons in the world, those countries that have them will regard them as serving useful security purposes—and as a minimum will regard them as a means of deterring the use of nuclear weapons against themselves or their allies. And it seems ... a necessary corollary of that premise that countries with nuclear weapons will regard it as essential to that deterrent purpose that they have the ability actually to use nuclear weapons in extremis.”¹⁶ De-alerting measures of any description must be evaluated across the full spectrum of types of problems that nuclear weapons present and the purposes they serve. Rather than the usual catalog of measures focusing on reducing “operational readiness,” the focus should be on measures that would serve the objective of making ill-considered use of nuclear weapons less likely. These would include “[r]efashioning doctrine and planning to eliminate conceptual reliance on any form

15 Steinbruner, John. “Reframing De-alert,” Presented at EWI’s seminar Reframing De-Alert: Decreasing the Operational Readiness of Nuclear Weapons Systems in the U.S.-Russia Context. June 21-23, in Yverdon, Switzerland <http://www.ewi.info/system/files/Steinbruner.pdf>.

16 Slocombe, Walter. “De-alerting: Diagnoses, Prescriptions and Side Effects.” Presented at EWI’s seminar Reframing De-Alert: Decreasing the Operational Readiness of Nuclear Weapons Systems in the U.S.-Russia Context. June 21-23 in Yverdon, Switzerland. <http://www.ewi.info/system/files/Slocombe.pdf>.

of nuclear use except in response to a nuclear attack.¹⁷

Risk assessment:

The risk of nuclear weapons being used in situations where use was either unintended or mistaken could arise from:

- Technical failure: Pure accident—something going terribly wrong at the technical/operational level that results in the unauthorized launch and detonation of nuclear weapons;
- Custody failure: Takeover and use of weapons by an individual madman, a renegade military faction, a terrorist group, or a hostile country;
- Information failure: Mistaken belief that an attack is under way, leading to an authorized but mistaken decision to launch a responsive attack;
- Launch under attack failure: An attack ordered and carried out very rapidly and without adequate consideration in the belief—possibly true, but possibly false—that an attack by the other side is either under way (LUA) or imminent (LOW);
- Crisis failure: Conscious, informed, authorized but profoundly mistaken decision to use nuclear weapons, resulting from an escalating cycle of action and reaction in a crisis.

The “hair trigger” technical problem, if it exists, calls for fixing the triggering mechanism by building in safety mechanisms without compromising the deterrent capacity of nuclear forces. “The ‘hair trigger’ image implies that a minor mistake—akin to jostling a gun—will fire the weapon. . . . U.S. nuclear weapons are less a pistol with a hair trigger than like a pistol in a holster with the safety turned on—and . . . in the case of nuclear weapons the ‘safety’ is locked in place by a combination lock that can only be opened and firing made possible if the soldier carrying the pistol receives a message from his chain of command giving him the combination. Since the 1960s the U.S. has taken a series of measures to ensure that U.S. nuclear weapons cannot be detonated without the receipt of both external information and properly authenticated authorization to use that information. These devices—generically Permissive Action Links or ‘PALs’—are in effect combination locks that keep the weapons locked and incapable of detonation unless and until the weapons’ firing mechanisms have been unlocked following receipt of a series of numbers communicated to the operators from higher authority. Equally important in the context of a military

organization, launch of nuclear weapons (including insertion of the combinations) is permitted only where properly authorized by an authenticated order. This combination of reliance on discipline and procedure and on receipt of an unlocking code not held by the military personnel in charge of the launch operation is designed to ensure that the system is fail-safe, i.e., that whatever mistakes occur, the result will not be a nuclear explosion.”¹⁸

At the same time it should be noted that a system of combination-locked safeties requires a highly survivable network for decision and communication with the operators. Otherwise there would be pressures for early transmission of the codes, with their insertion subject to a later execute order or even more dangerous, predelegation of authority to issue the execute orders. To whatever degree this requirement of receipt of external information has gaps, the cure is filling in the gaps. Greater transparency concerning command and control arrangements and cooperation on control technologies would be another important contribution to reducing the risks of technical failure.

The custody problem can be addressed by the new generation antitampering devices developed by the United States. With regard to information failure, the solution is cooperative mechanisms for exchanging information, such as the proposed U.S.-Russia data exchange center. The third problem of “launch under attack” failure can be addressed by a twin technical and doctrinal approach. “The appropriate answer to the LUA problem from both the military and the stability/safety point of view is not to try to make LUA physically impossible, but to take two mutually re-enforcing steps—one technical and one doctrinal—to make it unnecessary. The technical step is to remove the vulnerability by so designing and operating nuclear forces that the victim of an attack is highly confident that it will have effective options after absorbing an attack. The doctrinal step is to establish a clear strategic policy that abjures reliance on LUA (much less LOW) and requiring the military to shape its plans and its forces consistent with that principle.”¹⁹ Finally, the key to addressing the problem of crisis failure is paradoxically to ensure that preparations for use (which prior “de-alerting” would make necessary) are not required or at least do not make a fundamental difference to how the crisis unfolds.

¹⁷ Ibid.

¹⁸ Ibid.

¹⁹ Ibid.

According to a related U.S. perspective²⁰ the problem of a hurried response, more acute on the Russian side because of its still-improving early-warning system, should be tackled not by changing the posture of deployed weapons but by changing the nature of the decision-making process so as to slow it down. Instead of de-alerting the focus should be on transforming the U.S.-Russia relationship and on enhanced communication. Additional communication channels and shared early-warning data may serve the longer-term purpose of increasing decision time by easing suspicions about nuclear plans and programs, reducing pressures to respond promptly to ambiguous warnings, and building confidence between the two nations.

However, U.S. proponents of de-alerting hold that the continuous coupling of large alert forces programmed for massive attack raises the possibility of a catastrophic accident. Arguments that strategic systems are infallible lack credibility. These are “zoo animals who have never hunted in the wild.” The recent financial turmoil shows how apparently rational behavior of coupled individuals and institutions can get out of hand. Furthermore, the dispersed configuration of legacy postures makes it easier for terrorists to access nuclear assets.²¹

Costs of de-alerting, survivability, and crisis stability:

Some U.S. experts share the view of some Russian experts that de-alerting can have undesirable side effects. While there are steps that can and should be taken to reduce risks of unintended, unauthorized, accidental, or ill-considered use, some of the steps prescribed in the name of de-alerting are inadvisable from the point of view of reducing these very risks especially in times of crisis. “In particular, while they may be designed to address aspects of the problem of managing nuclear arsenals in times of calm they would have the effect of making the situation more dangerous in its other—and at least arguably more important—respects, notably in undermining the chances

for restraint in times of crisis.”²²

So long as nuclear weapons are seen to offer security benefits, countries with nuclear weapons will regard it as essential to deterrence that they have the ability actually to use nuclear weapons as a last resort. Thus de-alerting proposals that, as a side effect, make it physically impossible to use nuclear weapons have little chance of success. “Paradoxically the best way to avoid having nuclear preparations deepen a crisis is to insure that such preparations are unnecessary, or at least that they have no fundamental effect. What makes such a mobilization race dangerous is the fear that it will leave the loser in a decisively disadvantageous position. If, however, a state has high confidence that no amount of mobilization by others will produce a significant advantage, the mobilization process will be vastly less dangerous.”²³

In this perspective, increasing the survivability of nuclear forces and particularly the command, control, and communications links with them becomes essential. This can be done in parallel with other steps, such as improving arrangements for ensuring control over nuclear forces; cooperative measures—initially between the United States and Russia, but gradually bringing in third nuclear states—to exchange information about events that have the potential to be misread; system modifications to increase the ability of nations to deal with accidental, unauthorized, or mistaken launches—including command destruct mechanisms and limited ballistic missile defenses; and re-fashioning doctrine and planning to eliminate conceptual reliance on any form of nuclear use except in response to a nuclear attack.

According to another perspective, the primary reason why no one has yet diplomatically attempted de-alert is in the fundamentals of security policy rather than the costs or side effects of de-alerting proposals. The organizations that operate and support nuclear forces cannot be expected to initiate such a process, since it would require revisions of basic security objectives, operational principles, and institutionalized procedures far beyond the scope of their authority. The political leadership has acquiesced in this institutional resistance but can and should change course since the threat embedded in the current posture does not remotely fit the deterrent rationale in the current political circumstances. The wielding of thousands of pre-

²⁰ Woolf, Amy, “Nuclear Force Posture and Alert Rates: Issues and Options,” Presented at EWI’s seminar Re-framing De-Alert: Decreasing the Operational Readiness of Nuclear Weapons Systems in the U.S.-Russia Context, June 21-23, in Yverdon, Switzerland, <http://www.ewi.info/system/files/Woolf.pdf>.

²¹ Steinbruner, John. “Reframing De-alert,” Presented at EWI’s seminar Re-framing De-Alert: Decreasing the Operational Readiness of Nuclear Weapons Systems in the U.S.-Russia Context. June 21-23, in Yverdon, Switzerland <http://www.ewi.info/system/files/Steinbruner.pdf>.

²² Slocombe, Walter. “De-alerting: Diagnoses, Prescriptions and Side Effects,” Presented at EWI’s seminar Re-framing De-Alert: Decreasing the Operational Readiness of Nuclear Weapons Systems in the U.S.-Russia Context. June 21-23, in Yverdon, Switzerland. <http://www.ewi.info/system/files/Slocombe.pdf>.

²³ *Ibid.*

programmed weapons projects an intention to preempt rather than to deter, and the intention to preempt through thousands of weapons rather than deter through tens of them would never be legitimate from a global perspective. With regard to the so-called “race to re-alert,” competitive mobilization can be headed off if both sides have forces with capacity to deter, that is, forces that are survivable. Survivable forces need not participate in a re-alerting race. They can remain at low alert levels at all times without forgoing their deterrence function.

De-alerting, disarmament, and strategic stability:

By taking their nuclear weapons off alert, some believe the United States and Russia could demonstrate to other nations that nuclear weapons now play a reduced role in their national security strategies. They add that this might further nonproliferation goals by convincing others that they, too, can ensure their security without nuclear weapons. Moreover, this could be seen as a step on the path toward a world free of nuclear weapons; it would be easier to deactivate and eventually eliminate nuclear weapons if they were no longer viewed as a critical element of U.S. and Russian security strategies.²⁴

Proponents of de-alerting say that the United States and Russia should gradually and systematically remove fabricated weapons from operational status to secure storage separated from delivery systems under verification. They should initiate an international identification and continuous monitoring arrangement that in full maturity would provide the basis for accurate accounting. The size of total stored national weapons stockpiles should be reduced significantly below the limit of mass social destruction and there should be a categorical prohibition of any initial use or threat of use of a nuclear weapon for any purpose. There should be a corresponding prohibition on the initial use of conventional weapons for any offensive mission. These steps would take “de-alerting” in the direction of disarmament. In this view the United States also holds the primary responsibility for a political initiative that would transform the security relationship with Russia, and ultimately with China, from one based on confrontation to one based on collaboration.

Another perspective holds that while de-alerting may not have direct disarmament benefits, broader, more symbolic measures may bolster nonproliferation efforts. “Many

analysts question whether changes in the U.S. or Russian nuclear postures would affect the plans of other nations seeking their own nuclear weapons. They note that these nations seek nuclear weapons to address their own security concerns, not to mimic the United States or Russia. Nevertheless, there is a growing volume of literature that argues that nations who may not want their own nuclear weapons are more likely to support U.S. nonproliferation policies if the United States demonstrates, with its own policies and programs, that it is reducing the role and value of its own nuclear weapons.”²⁵

VI. Perspectives of Non-Nuclear Weapon States

Non-nuclear weapon states believe that there are inherent risks in the present high-alert postures. Their experts shared most of the concerns raised during the project by the U.S. and Russian proponents of “de-alerting.” There is a problem of “low probability–high impact” incidents, well-known in the financial sector, and a number of very worrying accidents have been documented. “Launch on warning procedures” means that if early-warning systems detect something that looks like an incoming nuclear strike, decision makers have very little time to determine whether to launch a retaliatory attack. Today’s post-Cold War environment in no way justifies this high level of alert, and non-nuclear weapon states find it increasingly difficult to accept the risks inherently associated with such alertness. The lowering of the operational status of nuclear weapons undoubtedly reduces the risk of unintended launches caused by technical malfunction, accident, or acts of terrorism. De-alerting will minimize the probability of an accidental nuclear war caused by a falsely perceived attack. Furthermore, de-alerting would be a much-needed confidence-building measure not only between those nuclear weapon states that continue to maintain nuclear alert levels of the Cold War period but also between nuclear weapon states and non-nuclear weapon states. In this sense de-alerting would be a highly welcome step in the lead-up to the 2010 NPT Review Conference.

Non-nuclear weapon states such as the sponsors of the U.N. General Assembly resolution 63/41 believe that

²⁴ Blair, Bruce G. “De-alerting Strategic Forces,” in Reykjavik Revisited: Steps Toward a World Free of Nuclear Weapons, complete report of 2007 Hoover Institution conference (Stanford, Calif.: Hoover Institution Press, 2008).

²⁵ Woolf, Amy, “Nuclear Force Posture and Alert Rates: Issues and Options,” Presented at EWI’s seminar Re-framing De-Alert: Decreasing the Operational Readiness of Nuclear Weapons Systems in the U.S.-Russia Context, June 21-23, in Yverdon, Switzerland. , <http://www.ewi.info/system/files/Woolf.pdf>.

they have a legitimate interest in the issue of operational readiness of nuclear weapons. Thus this is not an issue that should concern nuclear weapon states alone. Decreasing levels of readiness of existing systems contributes to progress toward a nuclear-weapon-free world and lowers the risk of accidental or unauthorized launches that may have potentially catastrophic consequences, including for non-nuclear weapon states. In this perspective, “de-alerting” is linked to nuclear disarmament (“disarmament in the mind”) and is a key step in a process to reduce the significance of nuclear weapons. It increases time available before use and makes nuclear weapons a weapon of last resort. Since de-alerting was one of the thirteen practical steps agreed to between the nuclear weapon states and the non-nuclear weapon states at the 2000 NPT Review Conference, the issue should be seen as part of the bargain related to nuclear disarmament and nonproliferation and joint ownership of Article VI of the NPT. All states have an interest in avoiding erosion of the NPT. De-alerting strengthens the NPT by increasing its credibility.

Non-nuclear weapon states acknowledge that some steps have been taken to reduce the operational readiness of nuclear weapons and reduce the risk of accidental, unauthorized, or hasty response. While some may feel reassured when nuclear weapon states tell them that nothing can go wrong with deployed systems, others are skeptical about this professed certainty, because people and complex technologies are involved. No technical system is 100 percent fail-proof and no human being is beyond error. The probability of an accidental or unauthorized launch is thus not zero. If the systems are considered so fail-safe by nuclear weapon states, why has it been found necessary to improve them over time and to take joint action, for example, through the JDEC agreement? Transparency with regard to what systems exist for reducing nuclear danger and how robust they are would help. It would also be helpful if the START follow-on process could address the issue of operational readiness. For non-nuclear weapon states the reduction process, while welcome, is not sufficient. They would like this quantitative process to be complemented by a qualitative process. They also wish that there would be a deeper dialogue between nuclear weapon states and non-nuclear weapon states on the issue.

De-alerting of nuclear weapons would assure non-nuclear weapon states that expanded roles for nuclear weapons in security doctrines are not being developed. Ensuring that all nuclear weapons are removed from high alert, as the world works toward the total elimination of nuclear arsenals, would help build confidence in the reduction of nuclear danger and be a significant plus for collec-

tive security. Decreasing operational readiness of nuclear weapons would also help implement bilateral arms control agreements whose negotiation has now resumed. Almost two decades after the end of the Cold War, action in this direction is both timely and reasonable. As some nuclear weapon states showed in the 1990s, such action can be carried out in relatively short time frames and is cheaper than it is to keep these systems on high alert. Further steps in this direction would have immediate positive effects, whether they are based on bilateral agreements or more ambitiously on a multilateral basis.

Non-nuclear weapon states’ experts believe that the U.N. General Assembly resolution on de-alerting is a focused instrument as compared to proposals advocating total nuclear disarmament and that it is being looked at in a more positive frame by the nuclear weapon states. It should be possible to consider de-alerting in a framework of survivability of nuclear weapons, which would mean that de-alerting measures would not be seen as undermining nuclear deterrence or strategic stability.

VII. Overcoming Obstacles and Bridging Differences

Russian and U.S. experts broadly identified three kinds of obstacles to further lowering of levels of operational readiness. First, key military and political relationships lack trust and confidence. Russian experts contend that the United States, United Kingdom, and France have that kind of a relationship among them and are NATO allies, while the U.S. does not have that kind of a relationship with Russia and China. Second, there are crucial differences in nuclear policies and postures; Russia and China may not agree to restrict their nuclear capabilities if they feel that they face the prospect of conventional attacks. Similarly, Pakistan may not agree to change its nuclear policy as long as India has overwhelming conventional superiority, nor would Israel, in view of its regional concerns. The third set of obstacles is technical. ICBMs are inherently designed for high alert, and so de-alerting them, depending on the measures chosen, could be costly and fraught with consequences. For example the actual warheads might have to be replaced with dummy electrical warheads so that the health of the system can be monitored, and there has to be a possibility of re-alerting within acceptable time limits.

With regard to the first set of obstacles, discussions brought out that Russia perceived “de-alerting” proposals

in the early 1990s against the backdrop of its economic difficulties and its weak negotiating position on strategic arms control agreements. The latter were seen as giving an advantage to the United States, for instance, through provisions allowing heavy-duty bombers to be de-alerted and “re-alerted” at will. This negative perception was compounded by differences over NATO expansion, the ABM Treaty, and use of precision-strike weapons during the administration of President Bill Clinton. To many Russians, “de-alerting” appeared to be part of a set of well-coordinated measures to divest Russia of its nuclear deterrent. The disruption in strategic dialogue and the gradual shift in U.S. doctrine toward greater reliance on high-precision conventional weapons during the Bush administration only strengthened this view. De-alerting would in this view lead to a greater role for cruise missiles, bombers, conventional weapons, missile defenses (with active defense performing the same function as counterforce weapons after the launch of a retaliatory strike), and potentially weapons in outer space. Thus progress on de-alerting became embroiled in the broader bilateral political and military relationship.

For the United States, too, the broader political and military relationship with Russia remains important, as illustrated by the agreements signed during the July 2009 visit of President Barack Obama to Moscow. The revival of arms control negotiations on a successor treaty to the START treaty that expires in December 2009 is playing an important role in this bilateral reengagement.

This illustrates a basic fact that progress on lowering the operational readiness of strategic systems in the United States and in Russia is not possible without a regular dialogue on security issues and on strategic arms control. Such a dialogue builds confidence and trust and makes it easier to reevaluate the legacy doctrinal and deployment practices that lead to high alert levels of nuclear weapon systems. Then in a virtuous circle, reducing the alert levels of weapons scheduled for disarmament could itself play a role as a confidence-building measure in a deep-cuts process, as would action to implement past agreements on data exchange and explore other, similar steps to reduce risks of accidental and unauthorized launches.

The second set of obstacles relates essentially to beliefs about “what deters?” Anything that is seen to undermine deterrence is likely to be resisted. Thus if the belief is that deterrence is ensured by large numbers of deployed alert weapons, physical measures that make it impossible or nearly impossible to use nuclear weapons will not find favor. Ironically, Russia’s modernization of its substantial submarine and mobile land-based forces could help

by making it unnecessary for it to rely on launch under attack (LUA) capability from forces at risk from a first strike. Even if Russia finds it difficult to abjure a LUA or “otvetno-vstrechnyi udar” posture, the United States could unilaterally develop a doctrine that does not require or even contemplate LUA even though the physical capability for such a doctrine may remain till Russia begins to abjure it as well. These changes would help refashion doctrine and planning to eliminate conceptual reliance on any form of nuclear use except in response to a nuclear attack. They would thus eliminate the first two of the three possible nuclear strike options—preemptive, launch under attack, and retaliatory.

Survivability is a key issue, a potential enabler of lowering of alert levels. If nuclear forces are survivable, they can be kept at low alert levels at all times without losing their deterrence function. Furthermore, countries with survivable forces can afford not to participate in a possible re-alerting race. The problem is that survivability has mainly been sought in the Russia-U.S. context through rapid reaction. As arsenals are reduced, the probability of accidental launches due to technical or human failure or of unauthorized launches will go down. This is because the number of interacting system elements will be lower. However, force survivability will become a key issue; not only the launchers but also storage facilities would be vulnerable to precision weapons, sabotage and nonstate actors. Some of these issues can be addressed unilaterally, such as by strengthening organizational control over remaining forces and by increasing their survivability, but concern over attacks by conventional weapons may have to be addressed through bilateral dialogue.

As noted earlier, the temptation to ratchet up alert levels of the remaining systems or at least resist any changes to existing levels of alert can be resisted if quantitative reductions are accompanied by shifts in doctrine and planning. It also needs to be borne in mind that even as the importance of survivability goes up, as numbers go down, the economic and organizational cost of ensuring survivability also goes down. The net effect seems to be positive. More survivability may imply lesser resistance to de-alerting.

With regard to the third set of technical obstacles related principally to ICBMs, perhaps the “wrong people” have been debating the issue: “De-alerting has been examined in the past but the wrong people were asked to develop the implementation strategy. That strategy should include the ability to generate those forces back to an alert status in a reasonable time period. The engineers who designed the systems, not the military professionals who

operate these systems, should be the ones tasked with developing the technical protocols for de-alerting. This has not happened.”²⁶ The circle could be enlarged to include the designers of strategic systems so that possibilities for lowering levels of operational readiness could be designed into the systems, especially ICBMs, from the beginning.

If the issue is decision time, then organizational theorists could be brought into the conversation to help build more “slack” into the system, giving decision makers the gift of time in an era when they do not need to rush. Further, if technical and organizational solutions to diminish nuclear risks have been institutionalized, in the United States, for example, these could be bilateralized or multilateralized. However, bringing more countries into the ambit would not be easy or automatic. Apart from issues related to sovereignty, secrecy of command and control and decision making, leadership styles, etc., there would be concerns that some of the technical fixes sought to be multilateralized, such as command destruct mechanisms, might be used as Trojan horses. Nonetheless, data exchanges on missile tests and rocket launches through jointly manned or internationally controlled centers could be an acceptable step to begin with, building confidence for latter measures.

Verification or the lack thereof has traditionally been seen as a technical obstacle to de-alerting. One view expressed was that verification or even transparency is not essential to de-alerting.²⁷ Decreasing operational readiness in a binding and verifiable manner will entail development of methods, visible to others, of rapid increase of operational readiness, which may have undesirable consequences in a crisis. Opponents of intrusive verification measures based on a narrow, technical view of de-alerting are not, however, averse to confidence building measures such as the exchange of information.

On the other hand, proponents of verification take heart in the improved capabilities of early-warning systems, especially satellite systems. Image resolution in these systems is down to the centimeters range. They can detect movement of strategic systems with considerable accuracy and distinguish, for example, whether a rocket is two-stage or three-stage. IT technology has evolved and information

on the status of strategic systems can be shared instantly. A RAND study has postulated that sensors on U.S. missile silos could detect their opening as well as the firing of missile engines and send that information to Russia in seconds. Verification can also be used to ensure that the patrol areas of submarines are restricted. Such measures may make it easier to lower levels of alert in a cooperative manner. As the number of deployed weapons goes down and as levels of operational readiness go down to low or de-alerted levels (Section II), the need for verification and transparency measures may increase. In this manner the two opposing views of the role of verification can be reconciled. Initially verification could be minimal, and as disarmament and de-alerting move ahead, the role of verification and transparency could be enhanced. Such an approach would also keep the costs of de-alerting manageable.

The issue of verification can also be seen in terms of how tight should be the linkage between de-alerting and disarmament. Elaborate verification measures could help place the steps taken to reduce operational readiness of nuclear weapons in a disarmament framework. That itself may be an obstacle to those who see de-alerting as the first step on a slippery slope to elimination. For proponents of elimination, de-alerting without verification or transparency may simply prolong the hold of nuclear deterrence and distract from the eventual goal of elimination of nuclear weapons. The link between operational readiness and disarmament can therefore be a double-edged sword. Depending on how it is framed, de-alerting could facilitate disarmament or it could end up being an insufficient, even obstructive, substitute for disarmament.

Significantly, the discussions during the project showed that there are no fundamental technical obstacles to de-alerting. “Hence, the dilemma, simply stated, is that de-alerting is not for the most part an operational imperative, but a decision to be made by the policy maker . . . and that has not happened.”²⁸ Bombers and submarines are easily de-alerted, since being on alert is not their “natural state.” De-alerting of missiles is a harder challenge, as in the case of the United States and Russia (not so in the case of China for thirty years): these countries’ missiles have been designed to be on alert (power on, warhead in place). However, the engineers who have designed the missiles would know how best to proceed. Another significant conclusion is that “even if Russia, U.S.A. and other nuclear weapon states

26 Habiger, General Eugene E. USAF (Ret.), “De-Alerting of Nuclear Forces: A Policy Imperative,” Presented at EWI’s seminar Re-framing De-Alert: Decreasing the Operational Readiness of Nuclear Weapons Systems in the U.S.-Russia Context, June 21-23, in Yverdon, Switzerland. <http://www.ewi.info/system/files/Habiger.pdf>.

27 Feiveson, Harold. Presented at EWI’s seminar Re-framing De-Alert: Decreasing the Operational Readiness of Nuclear Weapons Systems in the U.S.-Russia Context, June 21-23, in Yverdon, Switzerland. http://www.ewi.info/system/files/Feiveson_Harold.pdf.

28 Habiger, General Eugene E. USAF (Ret.), “De-Alerting of Nuclear Forces: A Policy Imperative,” Presented at EWI’s seminar Re-framing De-Alert: Decreasing the Operational Readiness of Nuclear Weapons Systems in the U.S.-Russia Context, June 21-23, in Yverdon, Switzerland. <http://www.ewi.info/system/files/Habiger.pdf>.

would have in possession reliable systems of prevention of accidental or unauthorized launch of ballistic missiles, this would not make unnecessary the procedures on lowering the ballistic missiles operational readiness.²⁹ There are obstacles to de-alerting but de-alerting is “long overdue” and requires a systemic approach covering both political and operational management of nuclear weapons.

VIII. Conclusion: Reframing the Issue and Future Steps

This project has sought to reenergize the debate on an issue that saw its heyday in the 1990s but is again becoming relevant as a means of reducing nuclear risk and of de-emphasizing nuclear weapons.

The discussion in the previous sections of this report has brought out that large numbers of nuclear weapon systems, especially land-based ICBMs, remain on high levels of alert in both Russia and the United States. These are legacy postures from the Cold War. However, the Cold War experience with alert levels was not static. Alert levels went up and down with changes in the strategic or operational environment. As the discussion in section III shows, levels of operational readiness also vary across nuclear geography. This diversity over time and space offers hope that operational readiness levels can be brought down if the issue is framed well and if the right political, security, and technical conditions are created.

This report points to possible consensus on a number of issues. First, alert levels are a function of political will; they are not an intrinsic military or technical condition. Given political will, they can be lowered. Second, de-alerting is not a new concept. Alert levels have been raised and lowered in the past. Third, current alert levels do not accord with the present political relationship between Russia and the United States. Alert levels date from the Cold War, but bilateral relations have evolved. Fourth, current alert levels present inherent risks. If this was not so, de-alerting measures would not be discussed bilaterally and there would be no efforts to upgrade systems for information exchange

between Russia and the United States. Fifth, regardless of how the risks are assessed, enhancing the safety and security of nuclear weapons and extending decision time are considered important. Sixth, information exchange between the nuclear powers needs to be upgraded. Seventh, there exist links between de-alerting and disarmament issues. The NPT agreement on the thirteen practical steps illustrates this link. Eighth, the survivability of nuclear forces is an important enabler for de-alerting. If forces are survivable, decision times can be prolonged and alert levels reduced without impairing security.

At the same time there are areas in which consensus is not yet achievable. First, some considered the danger of an accidental or unauthorized launch of a weapon under actual alert to be “hypothetical” but others thought it was too high not to warrant action. Second, while most recognized a need to act, the nature, timing, and sequencing of action differed. Some felt that improving political relations and quantitative disarmament should be given priority, with de-alerting deferred to a later stage. Others felt de-alerting should be dealt with in parallel to disarmament and be implemented as a confidence-building measure. Third, some felt that de-alerting produced more negative side effects than benefits. For example de-alerting could reduce strategic stability by inducing a possible re-alerting race. It could also lead to higher technical risks and costs than would be the case in maintaining actual alert levels. Others acknowledged the existence of side effects but wondered how those weigh up against the benefits of “de-alerting” in terms of risk reduction.

In reframing the issue of de-alerting, the first challenge is to change the notion that it is a set of narrow, technical measures aimed at lowering the possibility of accidental, unauthorized, inadvertent, or hurried nuclear use. Such a change would address the principal objection to de-alerting, that it seeks to address a problem—accidental, inadvertent, or unauthorized use—that does not exist, and that if it does exist in some instances, it can be addressed by technical and organizational means updated to cover current threats such as nuclear terrorism.

De-alerting has to be seen not only as a technical fix but also as a strategic step in deemphasizing the military role of nuclear weapons, in other words moving to retaliatory-strike postures and doctrines instead of legacy preemptive or “launch on warning” postures. This may require expanding the physical-measures-related definition of de-alerting made popular in the 1990s so political or doctrinal shifts in emphasis that lead to reduction in operational readiness—with a corresponding increase in decision-making time—can also be captured. The forthcoming U.S. Nuclear

²⁹ Esin, General Viktor (Ret.), “Crossing Obstacles and Implementation of De-alert Approach,” Presented at EWI’s seminar Re-framing De-Alert: Decreasing the Operational Readiness of Nuclear Weapons Systems in the U.S.-Russia Context, June 21-23, in Yverdon, Switzerland. <http://www.ewi.info/system/files/Esin.pdf>.

Posture Review (NPR) offers an opportunity for such a doctrinal shift.

A broader view would ensure that all relevant stakeholders, including the strategic communities in Russia and the United States, are drawn into the conversation. Important sections of the strategic communities in both countries continue to believe that de-alerting as traditionally defined seeks to address a nonexistent problem and that the remedy itself may worsen the situation by undermining nuclear deterrence and strategic or crisis stability. At the same time, these communities remain interested in nuclear risk reduction, especially through longer decision-making time and cooperative information exchanges. Most Russian and U.S. participants in this project favored strengthened technical and operational measures to make it impossible to launch missiles or arm their warheads without proper authority; anti-tampering devices to render warheads inoperable after an attempted takeover; enhanced capability to assess rapidly possible missile launches; expanded procedures for rapid exchange of information about ambiguous warning information; maintenance and strengthening of de-targeting arrangements; and improvement in the survivability of forces and their command and communication links. Russian and U.S. strategic communities could also consider de-alerting as an interim confidence-building measure applicable to weapon systems slated for elimination under arms control and disarmament treaties. Thus it is important to reengage them in discussions on de-alerting by broadening the scope of these discussions.

Reframing the issue in this manner may also offer a pathway to bring other nuclear weapon states into discussions on de-alerting. De-alerting would then have multiple stakeholders, including non-nuclear weapon states, and their stakes would be both in reducing nuclear risk and in promoting nuclear disarmament and nonproliferation. A concrete step in this regard could be to place technical measures aimed at risk reduction in a multilateral context.

Another step in reframing the issue could be promoting a different understanding of the relationship between operational readiness and deterrence, one that is more suitable to the interdependent post-Cold War world. If proponents of deterrence can be reassured that the aim of de-alerting is not to undermine deterrence but to ensure survivability by means other than the rapid response with hundreds of ready-to-use weapons, it would become easier to move to lower levels of operational readiness. Of course, any attempt to rush the demise of nuclear deterrence risks raising resistance to the idea of de-alerting.

Finally, in the context of disarmament, de-alerting could be reframed as the qualitative companion to the quantitative process of reductions in strategic systems. As part of the START follow-on negotiations, Russia and the United States could examine how measures to reduce operational readiness can accompany the bilateral arms control process. It is not necessary that a corresponding measure to reduce operational readiness be found at every step of the reduction process. However, it is essential that the question be asked each time: Could something be done to reduce the salience of nuclear weapons, either in or out of the reductions pipeline? It is also essential that de-alerting not come at the expense of irreversibility in reductions. Experience developed in the bilateral context could then be applied in a multilateral disarmament context as such a process develops.

The following steps could be taken early to facilitate the reframing of de-alert:

- Promoting a dialogue on legacy nuclear postures and doctrines within the United States and Russia as well as in their bilateral arms control dialogue. The U.S. debate in the context of the NPR is especially pertinent;
- Acknowledgment of the concerns of the Russian Federation regarding a “preemptive” strike, including with conventional strike weapons, and conveying reassurance so that it becomes easier for Russia to move away from “launch on warning” postures;
- Bringing de-alerting back into the Russia-U.S. arms control dialogue, as was the case during START II negotiations. As part of the START follow-on negotiations, Russia and the United States could examine how measures to reduce operational readiness can accompany the bilateral arms control process;
- Implementation of earlier understandings on nuclear risk reduction, including the Moscow JDEC. Once the center becomes operational, Russia and the United States could start sharing data with third countries and inviting them to contribute missile testing and SLV launch data to the center.
- Both Russia and the United States could further strengthen controls against unauthorized action, takeover, and tampering; further increase the capability of warning systems to discriminate real from imagined attacks; and enhance the survivability of their forces and their command and control systems;
- Bringing the designers of strategic systems into discussions on de-alerting in academic and Track 2 forums; organizational theorists could also be in-

volved in studies aimed at increasing decision time available to leaders;

- Involving other nuclear powers and non-nuclear weapon states as stakeholders in international security, in discussions on de-alerting. Arrangements related to data exchange and ensuring a capability to destroy a “rogue” missile in flight could be multilateralized, at least in terms of sharing data, to bring other declared nuclear weapon states into the process. Multilateralization of institutions such as the Joint Data Exchange Center may also have collateral benefits in the area of space security;
- The premise of maintaining nuclear deterrence between Russia and the United States should not be considered immutable. A bilateral dialogue on this issue may trigger a broader discussion involving other relevant states on reducing the salience of nuclear weapons, thus facilitating progress on

disarmament and nonproliferation.

As one participant in this project said, the world may have entered a new context with the current financial crisis. The major economies of the world are still not fully out of the crisis. Another unprecedented challenge, global warming, is looming. It perhaps cannot be addressed without expanding nuclear power. And this cannot be done on the basis of current security relationships. Expanding nuclear energy safely would require not only new designs of reactors and supply chains but also new cooperative relationships, especially among the United States, Russia, China, and India. Decreasing the operational readiness of nuclear weapon systems may be a crucial step toward building these new cooperative relationships. It would signal that the major powers no longer consider prompt and massive nuclear retaliation to be the lynchpin of their security strategy.

RE-FRAMING NUCLEAR DE-ALERT

Decreasing the operational readiness of U.S. and Russian Arsenals

21-23 June 2009
Hotel La Prairie
1400 Yverdon-les-Bains, Switzerland

Seminar Agenda

Welcome and Introductions

- **Christian Schoenenberger**, Head, Task Force on Nuclear Disarmament and Non-Proliferation, Swiss Federal Department of Foreign Affairs
- **W. Pal Sidhu**, Vice President of Programs, EastWest Institute

Session I: Russian Perspectives on De-Alerting Nuclear Weapons

Presenters:

- **General (Ret.) Viktor Koltunov**, Deputy Director, Institute for Strategic Stability of Rosatom
- **Eugene Miasnikov**, Senior Research Scientist, Centre for Arms Control, Energy, and Environmental Studies, Moscow Institute of Physics and Technology
- **Leonid Ryabikhin**, Executive Secretary, Committee of Scientists for Global Security and Arms Control; Senior Fellow, EastWest Institute

Comments by:

- **Harold Feiveson**, Co-Director, Program on Science and Global Security, Princeton University

Session II: U.S. Perspectives on De-Alerting Nuclear Weapons

Presenters:

- **Walter Slocombe**, Member, Caplin & Drysdale Attorneys; former Under Secretary of Defense for Policy, United States Department of Defense
- **John Steinbruner**, Director, Center for International and Security Studies at Maryland, University of Maryland; Chairman of the Board, Arms Control Association
- **Amy Woolf**, Specialist in Nuclear Weapons Policy, Congressional Research Service

Comments by:

- **Sergey Rogov**, Director, U.S.A. and Canada Institute, Russian Academy of Sciences

Session III: Past Approaches To De-Alerting Nuclear Weapons

- Open Discussion

Session IV: De-Alerting, Operational Readiness and Multilateralism: Perspectives of Non-Nuclear Weapons States

- **Ambassador Don Mackay**, Permanent Representative, Permanent Mission of New Zealand to the United Nations, Geneva

Working Dinner: The Future of the Nonproliferation Regime and New Opportunities for U.S.-Russia Cooperative Action

- **Keynote address by Deputy State Secretary Pierre Helg**, Ambassador, Federal Department of Foreign Affairs, Switzerland

Session V: Overcoming Obstacles and Operationalizing Approaches to De-Alert

- **General (Ret.) Eugene Habiger**, Distinguished Fellow and Policy Advisor, Center for International Trade and Security at the University of Georgia; former Commander of United States Strategic Command
- **General (Ret.) Viktor Esin**, Science Fellow, Institute of U.S. and Canada, Russia Academy of Sciences; former Chief of Staff of Russian Federation Strategic Missile Force
- **Grigory Chernyavsky**, Director of the Earth Space Monitoring Scientific Center (Russian Space Agency); Correspondent Member, Russian Academy of Sciences

Session VI: Operational Readiness and Ongoing Disarmament Efforts

- **Jeffrey Lewis**, Director, Nuclear Strategy and Nonproliferation Initiative, New America Foundation
- **Timur Kadyshev**, Senior Research Scientist, Center for Arms Control, Energy and Environmental Studies

Concluding Session: Next Steps in De-Alerting and Operational Readiness

- **Chairs: Christian Schoenenberger and W. Pal Sidhu**
- **Rapporteur: Amandeep Singh Gill**, Visiting Scholar, Center for International Security and Cooperation, Stanford University

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