Redefining the U.S. Agenda for Nuclear Disarmament

Analysis and Reflections

Dr. Lewis A. Dunn

Livermore Papers on Global Security No. 1
Center for Global Security Research

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Preface

With Lewis Dunn's paper on nuclear disarmament diplomacy, we are inaugurating a new monograph series under the auspices of the Center for Global Security Research at Lawrence Livermore National Laboratory. The series will explore complex emerging challenges in the emerging security environment as they bear on issues of deterrence, assurance, and strategic stability. Our goal is to explore these issues deeply enough to provide significant new understanding that is technically informed and policy relevant. Our premise is that thoughtful students of international security affairs continue to value such in-depth analysis as a way to help make sense of the large flow of data and opinion that reaches all of us on a daily basis. Our ambition is to generate four to six such papers per year on especially salient topics. The views expressed in these papers are those of the author and should not be attributed to the Center, the Laboratory, or the U.S. government.

This inaugural paper addresses one of the key questions facing national leadership seven to eight years after President Obama's April 2009 remarks in Prague and his commitment to take practical steps towards the long-term goal of the elimination of nuclear weapons. In the interim, some important steps have been taken. But there have also been many disappointments. The new presidential administration will face a security landscape quite different from that of eight years ago and must reassess U.S. priorities and approaches. As Lewis Dunn argues, some will be tempted to walk away entirely from the disarmament agenda, while others will advocate even more forcefully for unilateral U.S. steps to further reduce the role and number of nuclear weapons in its posture. Dr. Dunn sets out his own vision of how to adapt and carry forward the disarmament agenda, in a manner informed by developments in the security environment that point to a continuing role for nuclear deterrence. The result is both fresh and compelling.

Brad Roberts
Director
Center for Global Security Research

Summary

- Interwoven throughout the more specific questions the new U.S. President will need to address about future U.S. nuclear policy and posture is the question of whether the United States should walk away from the Prague vision of nuclear abolition or instead redefine the U.S. nuclear disarmament agenda in light of today's nuclear challenges and dangers and the obstacles to abolition.
- In exploring that question, this paper's starting point is those daunting nuclear challenges and dangers, including a Russian re-infatuation with the threat and usability of nuclear weapons in an East–West confrontation, the growing danger of U.S.–China strategic competition, the prospect of a North Korean nuclear missile threat to the American homeland, unprecedented polarization within the Nuclear Non-Proliferation Treaty (NPT), and a real (although uncertain and incalculable) risk of use of nuclear weapons.
- An important part of the new administration's comprehensive response to these challenges and dangers will be to revitalize nuclear deterrence, sustain nuclear modernization, and adapt U.S. and regional missile defense capabilities—all in the framework of strengthened defense and deterrence cooperation with U.S. allies in Europe and Asia.
- At the same time, for the new administration, there would be important *political and strategic payoffs from setting out a redefined U.S. agenda for nuclear disarmament* as part of its more comprehensive response.
- Properly crafted, a redefined agenda can contribute to: sustaining domestic and alliance support for revitalizing deterrence and nuclear modernization; regulating the U.S.–Russia strategic relationship and avoiding growing U.S.–China strategic competition; and protecting the global non-proliferation regime and reducing the risk of a next use of nuclear weapons.

The Strategic Elimination of Nuclear Weapons —the Look-Long Vision

- A redefined U.S. nuclear disarmament agenda should adopt a strategy of *"looking long and throwing short"*: articulating on the one

hand an American vision of the nuclear world of 2045 (the 100th anniversary of the use of nuclear weapons), and on the other hand pursuing near-term initiatives to reduce today's nuclear challenges and dangers, and to begin to put in place the building blocks of the look-long vision.

- *The American look-long vision should be a world of 2045 in which nuclear weapons have been strategically eliminated as instruments of statecraft but not completely abolished, dismantled, and eliminated physically.*
- Some limited number of residual nuclear weapons would still exist; metaphorically, they would have been moved to the back room or into cold storage. The 100th anniversary of the atomic bombings of Hiroshima and Nagasaki is used as the benchmark because that date will be of great international political salience and stocktaking.
- Strategic elimination of nuclear weapons has more specific dimensions: in policy (e.g., reliance on policies of nuclear deterrence would no longer be seen as essential to protecting national survival as well as other existential interests, or for extended deterrence); operationally (e.g., minimum residual levels of nuclear warheads would no longer be operationally deployed but instead retained in secure storage); institutionally (e.g., day-to-day national and alliance nuclear planning would have ceased, while remaining nuclear infrastructure would be devoted primarily to dismantling eliminated warheads, one-for-one security and safety refurbishment, and providing a hedge against unexpected developments); and internationally (e.g., a network of transparency and verification arrangements to reassure both nuclear- and non-nuclear-weapon states would exist).
- Across each of these dimensions, moreover, there are conceivable way stations forward to the 2045 goal—providing adaptations to successes and failures, temporary halts, and even a rethinking of that very goal if regrettably necessary.
- This look-long vision would reaffirm the Article VI goal of nuclear disarmament; emphasize that strategic elimination is the first priority and that the road to physical abolition runs inexorably through strategic elimination; and remain agnostic as to when complete physical abolition can ever be achieved.
- Getting from today to the 2045 world first requires successful efforts to manage and reduce today's nuclear challenges and dangers.

- *Political, security, technical, institutional, and domestic building blocks to realize this look-long vision can be identified*, including convincing other nuclear-weapon states that their own interests would be best served by working cooperatively with the United States in a redefined nuclear disarmament agenda.
- Some building blocks already exist or are currently being put in place incrementally. Others are challenging but are primarily of a technical nature or raise manageable political issues, while still others would require very significant political-military changes. However, even those changes are not outside the realm of what has occurred historically, or what has been achieved by nations motivated by enlightened self-interest and energized by a strategic shock.
- For the new administration, making strategic elimination by 2045 the lodestar of a redefined nuclear disarmament provides political and strategic benefits that warrant doing so, regardless of differing judgments of the difficulties of putting into place the required building blocks.
- Compared with the step-by-step approach to nuclear disarmament defended by the Obama administration, the P5, and America's non-nuclear allies in Europe, this look-long vision offers a detailed disarmament goal: that of strategic elimination (with specified policy to institutional dimensions). The look-long vision also provides way stations toward that goal, identifies the necessary building blocks to be pursued, and aims to realize strategic elimination by a future date—2045.

Throw-Short Nuclear Disarmament Initiatives for the New Administration

- The other half of the proposed strategy for a redefined U.S. nuclear disarmament agenda is "throwing short"—with three baskets of initiatives: to set out the U.S. nuclear disarmament strategy, vision, and commitment; to sustain, revitalize, and/or deepen and extend existing bilateral and multilateral arms control and nuclear disarmament-related agreements, structures, and processes; and to develop and put in place nuclear disarmament implementation and verification concepts, technologies, and institutions.

Set Out U.S. Strategy, Vision, and Commitment

- The starting point for a new administration should be to reaffirm the role of nuclear disarmament within a more comprehensive response

to nuclear challenges and dangers, as well as to articulate the U.S. look-long vision of the nuclear disarmament future.

- A new Nuclear Posture Review (NPR) will offer a means not only to address the requirements of a now-necessary revitalization of nuclear deterrence and of sustained nuclear modernization, but also to reaffirm elements of the 2010 NPR that support a redefined nuclear disarmament agenda.
- In particular, the new administration should reaffirm a continuing U.S. commitment to strategic restraint and engagement if reciprocated by Russia and China, as well as a continued U.S. readiness to pursue dialogues on strategic stability with both countries.
- While continuing to reject a "sole purpose" nuclear doctrine now, a new NPR also offers an opportunity to explicitly set out what the conditions would be to move in that direction. In turn, while rejecting proposals for nuclear de-alerting now, a new NPR should be seen as a way to change the terms of the de-alerting debate by proposing a U.S.–Russia assessment of the full range of measures that will reduce to an absolute minimum the risk of a next use of nuclear weapons.

Sustain, Revitalize, and/or Deepen and Extend Bilateral and Multilateral Agreements, Structures, and Processes

- Turning to the second basket of throw-short initiatives, a redefined nuclear disarmament agenda should include efforts to *sustain and then reawaken and revitalize the U.S.–Russia bilateral nuclear arms control process*, for the direct benefits to both countries of U.S.–Russian nuclear restraint and transparency, as well as for its NPT payoffs.
- A mix of cooperative, measured, and tough-minded approaches should be pursued in seeking to convince Putin's Russia that bilateral arms control serves Moscow's strategic interests, including making the argument (and supporting it with actions) that the breakdown of the five decades-long bilateral arms control process would leave Russia worse off (that is, with fewer windows into American strategic thinking and capabilities, less influence over U.S. decisions, no constraints on future U.S. strategic programs, and loss of recognition as an equal great power).
- This narrower logic of strategic self-interest may suffice to prevent a complete breakdown of bilateral U.S.–Russia arms control, and as the 2021 deadline of extending or letting lapse New START approaches, may result in agreement at least to extend that agreement for five years (as it allows).

- Nonetheless, while there was some bilateral arms control progress even in the unsettled Cold War era, today's political-military confrontation will remain a continuing impediment to revitalized bilateral arms control in pursuit of the look-long vision.
- The new administration should be prepared to work with Russia to find a cooperative, mutually beneficial path back from East–West confrontation. This would involve combined actions to reduce the attractiveness of Russian political adventurism, to reduce Moscow's sense of post-Cold War betrayal and insecurity, and to renew building habits of cooperation among two great powers, particularly taking advantage of historic shared interests in preventing proliferation.
- At the same time, Washington should make clear that not only managing the narrower strategic relationship in ways that would serve both countries' interests but avoiding a new Cold War requires Russian cooperation as well—and that if Putin's Moscow is unprepared to join in that undertaking, the United States and its NATO allies will take whatever unilateral actions deemed required to assure their own security.
- Different third party actions and developments could reinforce efforts to gain Russian reengagement, most importantly including a confirmed North Korean nuclear-missile threat to the American homeland. That threat would very likely create great pressures for far-reaching U.S. protective responses, and in so doing, would provide compelling strategic incentives for Moscow to reengage in the interest of shaping those responses and reducing adverse spillovers for its strategic posture.
- In conjunction with making the case for a revitalized bilateral U.S.–Russia arms control process, the administration should set out its ideas on pathways forward.
- From more to less ambitious, three such pathways are explored in the main body of this paper: a joint U.S.–Russian zero-based assessment of post-New START strategic arms control—in effect, exploring each side's strategic concerns and uncertainties and identifying possible bilateral arms control actions to address those concerns and uncertainties (with everything on the table); second, pursuit of U.S.–Russian strategic reassurance, predictability, and transparency measures, including a U.S.–Russia "Strategic Code of Conduct"; and third, a resumption of cooperative work on the verification of future strategic arms control agreements.

- In parallel, *convincing the Putin leadership to stop its gratuitous nuclear saber-rattling and to convince it that a nuclear war cannot be won and must not be fought—the Reagan-Gorbachev injunction*—is essential to reducing nuclear dangers and advancing the look-long vision.
- U.S. and NATO messages (backed by actions) should focus on: disabusing the Putin leadership of the idea that the threat or use of nuclear weapons is a path to political-military success; stressing that fears of a Russian belief in the usability of nuclear weapons will dramatically backfire, creating incentives for the United States to pursue those very objectives Moscow claims to fear most (e.g., neutralizing Russia's nuclear deterrent or pursuing a color revolution); and finding opportunities to remind today's Russians of the grave risks and uncertainties inherent in any U.S.–Russian nuclear crisis (including by revisiting jointly the lessons of past U.S.–Soviet nuclear crises).
- Turning attention to Asia, *U.S. and Chinese officials and experts by now have a very good understanding of each other's concerns, uncertainties, and suspicions—the challenge for both countries is to advance from dialogue to a process of mutual strategic reassurance and restraint.*
- Continuation of official and semi-official strategic dialogue—with strategic defined to encompass offenses and defenses, cyber, and space activities—should remain the baseline.
- U.S.–China strategic dialogue should be used to send several positive messages: that Washington and Beijing have a shared interest in a process of mutual strategic reassurance and ultimately restraint; that such a process is not a strategic trap for China; and that the United States remains committed to the overall goal of minimizing competition and building long-term, mutually beneficial cooperation. Unlike the U.S–Russia relationship, moreover, the overall political-economic relationship between Beijing and Washington is considerably less an obstacle and more an incentive to cooperation.
- At the same time, the new administration's message also needs to be that building cooperation is not only a U.S. responsibility, that reassurance is not a one-way street, and that absent a Chinese readiness to engage, Washington will take whatever unilateral actions are needed to lessen U.S. concerns and manage its uncertainties about China.
- Assuming Chinese readiness to go beyond dialogue and to begin to explore a process of mutual strategic reassurance, an initial step

would be to assess jointly—preferably officially, but as a fallback semi-officially—the many reassurance and predictability measures already proposed in semi-official meetings. Measures range from data and information exchanges through joint assessments, table-top exercises, and technical CBMs to mutual declarations related to planned and future programs and capabilities.

- The objective would be to identify and explore packages of measures to address, for example, respectively U.S uncertainties about China's nuclear modernization; Chinese uncertainties about a threat from U.S. missile defenses and conventional strike to China's limited nuclear deterrent; and both countries' concerns about conventional attacks (including space and cyber) by the other against its own strategic assets.
- Potentially promising measures could be implemented, perhaps asymmetrically, in pilot projects in an incremental process.
- At best, a future U.S.–China process of mutual reassurance would become a stepping-stone to a more comprehensive *process of mutual strategic restraint*—an idea that warrants further exploration now in the existing semi-official strategic dialogue.
- Mutual strategic restraint would not involve formal treaty-based arms control; instead, at its core would be negotiated understandings on specific restraints, perhaps again applied asymmetrically and reflected in political commitments.
- A future North Korean nuclear-missile threat to the American homeland could very well tip the balance in favor of Beijing's readiness to engage in a process of mutual reassurance and restraint that would offer to make resulting U.S. strategic responses more predictable and subject to Chinese influence in exchange for greater predictability and U.S. influence over China's strategic activities.
- Looking beyond the bilateral agenda, the new administration should seek support from the other P5 countries to *deepen and extend the P5 Process to include cooperation to reduce the risk of a next use of nuclear weapons*, to put in place the building blocks of nuclear disarmament, and to develop a P5 Strategic Code of Conduct. A deepened P5 work program would not only help reduce polarization among NPT Parties but also be valuable in its own right.
- It is also time to take a *more ambitious U.S. approach to negotiation of a multilateral fissile material treaty* by including within its scope declarations and other transparency measures for past production and existing stocks, in addition to a production cutoff.

- Doing so would result in greater NPT payoffs, support putting in place the transparency and verification building blocks of the look-long vision, and be consistent with traditional American support of nuclear transparency.
- In addition, if when the new administration takes office the Geneva Conference on Disarmament (CD) remains unable to begin negotiations, the United States should acknowledge that the CD is a dead end and pursue a different negotiating mechanism—with one possibility being the negotiation of a fissile material treaty among like-minded states.
- India and Pakistan would be unlikely to join those negotiations—but absent a future regional nuclear shock that creates now-lacking incentives for mutual restraint, neither of these countries should be expected to accept limits on its production of fissile material for nuclear weapons, and nor should they be allowed to block multilateral progress.
- Lack of political support for resumed nuclear testing and the adverse impact on sustaining nuclear modernization of a fierce congressional debate over resumed testing provide ample reasons for continuing the moratorium on nuclear testing.
- Balancing strategic, political, and technical considerations, *the benefits of ratification of the Comprehensive Test Ban Treaty outweigh the risks*—and the new administration should begin early to make that case with the U.S. Senate and the public in a sustained and carefully crafted series of ratification hearings comparable to those that led to successful ratification of earlier Cold War arms control treaties.
- *Engagement with NPT non-nuclear-weapon states* in setting out a redefined agenda for nuclear disarmament remains essential, particularly given the dangers of today's greatest-ever polarization among NPT Parties.
- Assuming a decision to articulate a detailed look-long vision of strategic elimination by 2045, many non-nuclear-weapon states will regard the redefined agenda as an important advance from the step-by-step approach; even so, the new administration will need to respond to arguments that this goal is not ambitious enough.
- In so doing, the new administration will now also need to counter today's momentum for negotiation of a nuclear weapon ban treaty, in part by cautioning that rather than delegitimizing nuclear weapons, pursuit of a ban is much more likely to delegitimize nuclear disarmament in the eyes of the very nuclear-weapon states without

whom no nuclear disarmament can occur. It will divert multilateral energies and erode political will among the nuclear-weapon states to find a cooperative way forward on nuclear disarmament.

- Ultimately, prospects for success in making the case for the redefined agenda—and in reducing the polarization within the NPT—will depend most on results in revitalizing the U.S.–Russia nuclear arms control process, beginning a process of U.S.–China mutual reassurance, and extending the P5 work program.
- For some U.S. allies, however, engagement will mean reassuring them that pursuit of the look-long agenda will enhance—not undermine—their near-term security.
- Successful *regional nuclear threat reduction outside of Europe* will rely most on the U.S. defense and deterrence posture, diplomacy and confidence-building, and traditional non-proliferation policies; nuclear disarmament initiatives may play a role, sometimes important, sometimes at the margin.
- In northeast Asia, the mix of continuing advances in North Korea's nuclear and missile programs, significantly stiffer sanctions in response, and a possible new emphasis by Kim Jong-Un on pursuit of economic development calls for a *two-track approach to North Korea.*
- On the one hand, the new administration should seek agreement with Pyongyang on a phased comprehensive diplomatic solution that would combine a political settlement, economic engagement, and denuclearization. On the other hand, it should continue to put in place robust deterrence and defense capabilities to protect U.S. allies, U.S. forces, and the American homeland, in anticipation of the possibility (if not even the likelihood) that yet again pursuit of denuclearization within a broader political-economic settlement proves unavailing.
- In turn, ensuring the credibility of the U.S. extended deterrent remains the most important means to damp down any proliferation pressures in Japan and South Korea.
- In South Asia, with the support of other countries, efforts remain needed to encourage nuclear restraint and regional political-military confidence-building; within the legal limits of NPT obligations, to support effective nuclear security and control; and to be prepared once again to use the good offices of concerned outsiders to head off escalation in a future India–Pakistan crisis or conflict.
- Turning to the Middle East, effective implementation of the Joint Comprehensive Plan of Action with Iran is and will remain at the

core of Middle East nuclear threat reduction. As preparations begin for the 2020 NPT Review Conference, it also will become increasingly important for U.S. NPT diplomacy to encourage renewed consultation among countries within the region (including the two key players of Egypt and Israel) to find a mutually acceptable path toward regional engagement on a Middle East Zone free of nuclear weapons and other weapons of mass destruction.

- Senate ratification of the protocols (dealing with threat or use of nuclear weapons) of the nuclear free zone treaties for Africa, the South Pacific, and Central Asia should be pursued; it would have few costs and would be a boost for the NPT as well as for the credibility of U.S. non-proliferation and disarmament strategy.

Implementation, Transparency, and Verification Concepts, Technologies, and Institutional Confidence

- Many of the requirements for concept and technology development for nuclear disarmament are well known and considerable analytic work already exists.
- Building on that past work, *the new International Partnership for Nuclear Disarmament Verification now provides a valuable focus for further advances.*
- The new administration should fully support this Partnership—politically, financially, technically, and bureaucratically.
- At the same time, greater participation by the International Atomic Energy Agency should be encouraged, partly to add to the longer-term credibility and legitimacy of these activities, as well as broader participation by nuclear disarmament advocates.
- It also is not too soon to think through how to implement the initial results of the Partnership in late 2017, including by possibly creating a U.S. or P5 nuclear disarmament verification test bed.
- Efforts to develop monitoring and verification concepts and technologies for future nuclear disarmament, however, will be as good only as the *readiness of states and their international institutions to stand up for compliance with future agreements.*
- Among the priorities for compliance, confidence, and institution building are bringing Russia back into full compliance with the INF Treaty and ensuring Iranian compliance with the Joint Comprehensive Plan of Action.

Some Closing Reflections

- In closing this summary, it is granted that the proposed redefined U.S. agenda for nuclear disarmament is far-reaching in its look-long vision of a world of 2045 in which nuclear weapons have been eliminated strategically as means of statecraft; it is also wide-ranging in its throw-short initiatives to reduce nuclear challenges and dangers and begin to put in place the building blocks of strategic elimination—all within a more comprehensive response by the new administration.
- This paper's argument will be challenged—though in very different ways.
- Advocates of accelerated progress on nuclear disarmament will argue that a 2045 goal of strategic elimination does not go far enough; nuclear abolition should be the goal—and sooner. But the building blocks of the complete physical elimination of nuclear weapons do not now exist—and may never exist. In any case, the road to nuclear abolition runs inexorably through strategic elimination—only once nuclear weapons are no longer seen as essential means of statecraft will today's nuclear weapon states think seriously about their abolition.
- Particularly at home, advocates of accelerated nuclear disarmament progress will also oppose actions to revitalize nuclear deterrence and sustain nuclear modernization as undercutting pursuit even of strategic elimination. To the contrary, taking such actions as well as demonstrating a readiness to take further unilateral steps if greater strategic competition cannot be avoided is one of the most important practical arguments that the new administration can make to convince Moscow and Beijing that their interests are best served by cooperative engagement.
- From a very different perspective, still other persons will judge that strategic elimination is too much of a stretch goal. In their view, even assuming good will and cooperation by nuclear- and non-nuclear- weapon states, the needed building blocks for its realization cannot be put in place by 2045, if ever. However, these building blocks differ considerably in terms of the challenges of putting them in place; there are way stations on the road to strategic elimination as well as possibilities to learn from failures and successes; and not to be forgotten, comparably great changes

have occurred historically, motivated by enlightened self-interest sometimes spurred on by a strategic shock.

- Skepticism about the readiness of other nuclear-weapon states, especially Russia and China, to engage will almost certainly be another challenge to this paper's arguments. However, those countries' security interests would be served by the type of cooperative engagement at the core of the redefined agenda. More essential with both Russia and China, to repeat, there are ways to drive this point home by words and actions. Absent engagement, the United States and its allies can and should respond unilaterally.
- Skeptics also are likely to warn—rightly so—that a redefined nuclear disarmament agenda would be used by some nuclear disarmament advocates to oppose actions to revitalize deterrence, sustain nuclear modernization, and take other strategic initiatives as part of the comprehensive response to nuclear challenges and dangers. As just noted, there are responses to such opposition; it also is much more likely that articulating a redefined nuclear disarmament agenda would reinforce broader political and public support for such initiatives.
- Implicit in these criticisms is a further question: *What if the new administration sets out the redefined agenda and for whatever reasons, it proves too difficult to get from today to a 2045 world of strategic elimination?*
- Even if that is the outcome, articulating a look-long vision of strategic elimination and its associated throw-short disarmament initiatives will leave the United States no less secure—and very possibly, considerably more secure.
- Doing so will strengthen the new administration's political position today in responding to nuclear challenges and dangers, including unilaterally with Russia and China if the agenda's call for cooperative engagement is disregarded; over time, whatever progress is achieved toward the look-long vision will be valuable in and of itself, especially so if progress includes avoiding ever-heightening nuclear competition with Russia and China as well as new P5 cooperation to reduce the risk of nuclear use and lessen today's great polarization within the NPT; and if a next use of a nuclear weapon cannot be prevented, the goal of strategic elimination will provide an all-the-more necessary lode-star to shape resulting national and global nuclear choices.

- *Regardless of judgments about the goal of strategic elimination of nuclear weapons by 2045, every U.S. President since the atomic bombings of Hiroshima and Nagasaki has sought to build toward a safer nuclear world, not only for the United States but for all countries*. If the arguments made here for a redefined U.S. agenda for nuclear disarmament—and their ensuing discussion and debate—contribute to that historic American objective, this paper will have more than succeeded.

Redefining the U.S. Agenda for Nuclear Disarmament

On April 9, 2009, President Obama's Prague speech affirmed "America's commitment to seek the peace and security of a world without nuclear weapons." As the next American President is inaugurated on January 20, 2017, the global nuclear landscape will be very different—much more challenging and dangerous. That new President will need to address many questions related to U.S. nuclear policy and posture, from how much to invest (and in what ways) in the modernization of U.S. nuclear infrastructure and force posture to how to respond to Russia's violation of the Intermediate- and Shorter-Range Nuclear Forces (INF) Treaty and whether to make a renewed attempt to convince Moscow that a follow-on to New START is in both countries' interests. Coursing throughout these specific questions, there is a further question: should the United States walk away from the Prague vision of nuclear abolition, or instead redefine the U.S. nuclear disarmament agenda in light of today's nuclear challenges and dangers?

This paper addresses the nuclear choices facing the new administration, with a particular focus on the potential contributions to U.S. and global nuclear security of a redefined agenda for nuclear disarmament. To do so, the paper first briefly sketches the global nuclear landscape that will face the next U.S. President and the new administration. The next section argues that for many reasons, the United States should not simply "walk away" from articulating and pursuing an American agenda for nuclear disarmament as part of a more comprehensive approach to today's nuclear challenges and dangers. But that agenda needs to be redefined in light of those challenges and dangers, as well as in response to the obstacles to nuclear abolition. The following two sections explore the overall strategy and more specific initiatives of a redefined U.S. agenda. The concluding section focuses on the most important near-term priorities for the next administration and offers some closing reflections.

One final prefatory remark is in order given the uncertainties of American politics today. This paper assumes that whoever is the next U.S. President will continue American global engagement and leadership as necessary to protect U.S. national security and well-being, whether from the start or after a period of reassessment. To assume otherwise would be to write a very different paper.

The New Global Nuclear Landscape for the Next U.S. President

The global nuclear landscape is a sobering, challenging, and dangerous one. This world is not the one envisaged by President Obama in his Prague speech, nor, for that matter, the one of a reduced role for nuclear weapons sought by every U.S. President since the end of the Cold War.[1] But it is the nuclear landscape confronting the new U.S. President and administration.

The Prague Vision—Limited Progress, Heightened Expectations, and Deep Disappointment Abroad

The Prague speech looked toward a world without nuclear weapons even as President Obama acknowledged that "[t]his goal will not be reached quickly—perhaps not in my lifetime." It set out an ambitious agenda: the negotiation of a new strategic arms reductions treaty with Russia, followed by further nuclear reductions and the inclusion in the arms control process of all nuclear-weapon states; U.S. ratification of the Comprehensive Test Ban Treaty (CTBT); the negotiation of a treaty that cuts off the production of fissile material for nuclear weapons (an FMCT); a strengthened Nuclear Non-Proliferation Treaty (NPT) and a commitment to preventing the further spread of nuclear weapons (with particular reference to North Korea and Iran); and within four years, securing all vulnerable nuclear material globally.

There has been some progress. Negotiation of the

The New Global Nuclear Landscape

New START agreement, the global Nuclear Security Summit process, and, at least for now, the Joint Comprehensive Plan of Action (JCPOA) restraining Iran's nuclear activities stand out. In other respects, the results have been disappointing. In some instances, lack of progress reflects conditions beyond U.S. influence. This is so, for example, with today's bilateral nuclear disarmament stalemate, despite efforts to convince Putin's Russia to begin negotiations on still deeper cuts in strategic forces, as well as on non-strategic nuclear weapons. China has similarly proved a reluctant strategic partner. This restraining impact of other countries also is evidenced by the inability to overcome Pakistani (and in the background, Chinese) unwillingness to agree to negotiation of an FMCT. More broadly, the combination of heightened expectations and unachieved aspirations has now given way to deep disappointment and disillusionment among many, if not most, non-nuclear-weapon states that are parties to the Nuclear Non-Proliferation Treaty (NPT).

Confrontation with Russia under a Darkening Nuclear Shadow

A nuclear-armed Putin's Russia that regards the United States and NATO as a threat to its security[2] is another part of the new nuclear landscape. For many reasons, the Obama administration's efforts to "reset" the relationship proved unavailing. Similarly, Moscow proved unable to say "yes" to U.S. efforts to address Russia's stated concerns about U.S. and NATO missile defenses. Disregarding the 1975 Helsinki agreement, Moscow also used military force to change the borders of Europe and assert not only its claim to influence over neighboring countries but also its right to protect Russian-speaking nationals in what now are NATO member states.

Growing U.S.–NATO–Russia political and military confrontation is made even more worrisome by Russia's nuclear doctrine. Since 2000, that doctrine has included possible use of nuclear weapons to "de-escalate" a conventional military conflict with the United States that Russia was losing and as qualified in the 2010 version, in which "the very existence of the state is under threat."[3] How narrowly or broadly the Putin leadership and the military would define such an existential threat is not known. As a result, there is a possibility that any loss of a conventional conflict with the United States would be seen as an existential threat to the regime. In turn, today's Russian thinking about the usability of nuclear weapons may go so far as to include the threat to use nuclear weapons as an offensive means to intimidate NATO members and make it too difficult for NATO to muster the political will to respond to Russian military aggression against a NATO Baltic member. Limited use of nuclear weapons could even be viewed as a means to shatter the

will of NATO to mount a counter-offensive or to disrupt that counter-offensive once it had begun.[4]

Russia's posture reinforces these concerns. Major Russian military exercises since 2000 have apparently included the use of nuclear weapons to "de-escalate" a conflict.[5] Within the past several years, Russia has also resumed flights of *Bear* nuclear-capable bombers along the borders of NATO members and Japan. Russia has also carried out exercises simulating the use of nuclear weapons against European targets. Although perhaps it can be understood as a replacement of aging systems in a to-be-expected modernization cycle[6], the deployment of several new types of strategic missiles and a new strategic bomber will provide substantially upgraded capabilities. More difficult to explain than such routine modernization is Russia's investment in modernizing its non-strategic nuclear forces, including, if necessary, violating the INF Treaty to do so.

There has also been a continuing, all-too-easy readiness on the part of senior Russian officials to raise the specter of nuclear weapon use. Putin's statement in 2015 that he had been ready to put nuclear weapons on alert during the Russian invasion of Crimea made this point implicitly;[7] the threat, made by the Russian ambassador to Denmark, to target Danish ships with nuclear weapons if that country joined NATO's missile defense[8] is only one of many examples of explicit Russian nuclear saber-rattling.

In addition, Russia's leadership has moved ever closer to rejecting the nearly fifty-year record of using arms control to help regulate the U.S.–Russian strategic relationship. The partial exception is the continued effective implementation by the two countries of the New START Treaty, from its extensive verification and transparency measures to the actual reductions of nuclear weapons. But even here, New START's status is uncertain after 2021, at which point it can be extended for five years, replaced, or simply allowed to lapse.

In response, confronting what NATO Secretary General Jens Stoltenberg has called "[a] Russia which is destabilizing the European security order," NATO's primary response has been to strengthen its conventional collective defense and deterrent posture.[9] NATO has also reaffirmed the importance and possibility of dialogue with Russia to seek ways that Russian concerns can be addressed.[10] With regard to the nuclear dimension of NATO's deterrence policy and posture, NATO leaders have reminded Russia that NATO "deterrence has a nuclear component" and have cautioned that ". . . no one should think that nuclear weapons can be used as part of a conventional conflict."[11] Within NATO, limited steps have also begun to be taken toward restoring

nuclear planning and decision-making capabilities and processes that have been allowed to atrophy as part of the Alliance's post-Cold War posture and priorities. Quiet discussions are underway on other possible adaptations related to readiness, survivability, exercises, and burden sharing.

So far, more far-reaching changes of NATO's nuclear posture have been off the table.[12] Such changes almost certainly would raise controversies within the Alliance, given continued anti-nuclear sentiments among publics and officials in some NATO member states. However, even these more limited steps toward revitalizing the nuclear dimension of NATO's overall deterrent posture are a significant but necessary shift from the nuclear world of the Prague speech.

A Growing Danger of U.S.–China Strategic Competition

The April 2010 U.S. Nuclear Posture Review (NPR) called for ". . . a high-level, bilateral dialogue[s] on strategic stability . . ." between the United States and China in order ". . . to enhance confidence, improve transparency, and reduce mistrust."[13] Nearly eight years later, general military-to-military dialogue has been institutionalized, some limited official confidence-building agreements for military activities have been signed, and limited official dialogue of strategic issues has taken place. A very robust set of semi-official and unofficial Track 1 ½ and Track 2 strategic dialogues also exist. However, the type of in-depth strategic dialogue envisaged by U.S. officials has proved elusive, with Chinese officials continuing to reject American proposals to take that step.[14] Instead, mutual strategic uncertainties and concerns are all too evident.

Chinese officials and experts are concerned that a combination of U.S. missile defenses and prompt conventional global strike capabilities could erode China's limited nuclear deterrent.[15] U.S. expert and academic proposals that call for the development and deployment of new U.S. limited nuclear options for use in an escalating conflict with China are closely tracked, even though such proposals do not reflect official U.S. thinking or policy. Chinese officials and experts have repeatedly called for the United States to stop its deployment of capabilities seen as threatening to China's nuclear deterrent and to formally accept mutual vulnerability as the basis of a stable strategic relationship between the two countries.

For their part, U.S. officials and experts have rejected such calls, although on multiple occasions they have stated that the United States does not seek to undermine China's nuclear deterrent and acknowledged U.S. vulnerability as a strategic fact. At the same time, U.S. officials and experts have made clear U.S. uncertainties about the

scope and ultimate purpose of China's nuclear modernization, given China's lack of transparency. Affirmations that China seeks only a "lean and effective" nuclear posture have been welcomed but have been seen to provide no detail as to how that is defined. Similarly, Chinese affirmations of its no-first-use of nuclear weapons posture have provided little reassurance, given U.S. skepticism about such declarations, uncertainties about how China defines "a first use," and some evidence that China's military may be thinking about how to use nuclear weapons as part of controlling an escalating regional conflict with the United States.[16]

There are other reasons for concern that the U.S.–China strategic relationship is approaching a turning point. Growing interaction between China's relentless assertion of territorial claims in the East and South China Seas and U.S. support for freedom of navigation for both the U.S. and U.S. allies could lead to a military confrontation and a resulting reassessment of strategic requirements in both countries. The United States now is entering into an across-the-board modernization of its aged strategic nuclear posture, a development that is likely to raise new uncertainties in China. Potential future confirmation that North Korea had deployed a nuclear-armed missile capable of striking targets in the United States would almost certainly result in changes of U.S. regional and global military posture that would spill over to heighten U.S.–China strategic uncertainties and concerns at the start of the new administration.[17]

An Evolving Set of Nuclear Proliferation Country Challenges

When the new U.S. President is sworn into office on January 20, 2017, the first year of implementation of the Joint Comprehensive Plan of Action (JCPOA) with Iran will have just concluded. Barring an unexpected surprise, the JCPOA will have constrained Iran's potential pursuit of nuclear weapons.[18] At the same time, the new administration is likely to confront questions about Iran's implementation of the agreement, ranging from unintentional non-compliance or, although less likely so soon, to more serious forms of non-compliance. More broadly, although some of Iran's immediate neighbors have questioned the JPCOA, its constraints on Iran's activities have likely damped near-term proliferation pressures among its Gulf neighbors (or more widely in the Middle East).

In northeast Asia, the new administration will confront the steady expansion of North Korea's nuclear and missile capabilities, including continuing tests.[19] Pyongyang already poses a direct nuclear threat to U.S. allies and bases in the region; before long, it could deploy a nuclear-missile capability to threaten the American homeland. North Korea

already has also been fully prepared to threaten the use of nuclear weapons against the United States and could even think seriously about the use of nuclear weapons in a conflict on the Korean peninsula.[20] As a result, there continues to be an undercurrent of support among more conservative elements within South Korea to revisit yet again that country's non-nuclear status.[21] For now, such views are held by only a minority of the nation's political leadership. Instead, for South Korea (and for Japan), reliance on the U.S. extended nuclear deterrent remains preferable to pursuit of national nuclear weapon programs.

Elsewhere, Pakistan and India, although the latter to a lesser extent, are continuing to steadily expand their nuclear weapons postures, including: production of nuclear weapons materials, development of delivery systems (including sea-borne components in India and short-range battlefield ballistic missiles in Pakistan), nuclear doctrines (whether no-first-use for India or so-called "full-spectrum deterrence" with plans for tactical use for Pakistan), and deployments of nuclear weapons.[22] This nuclear interaction, moreover, is nested within a dangerous mix of historic political animosity, repeated failures of confidence-building attempts, a conventional military balance favoring India, and the ever-present possibility of another terrorist outrage in India directly tied to organizations in Pakistan. As has repeatedly occurred over the past decades, a future crisis between these two countries will increase the risk of escalation—perhaps to the nuclear threshold, or beyond.

A Continuing Risk of Nuclear Terrorism

The threat of nuclear terrorism also is part of the nuclear landscape. Before the 9/11 attacks, Osama bin Laden's al-Qaeda had shown its interest in nuclear weapons. ISIS has already used chemical weapons in Syria and allegedly in Iraq[23], and may view chemical or biological attacks in Europe as a next step upward in its campaign against Western targets.[24] For ISIS leadership, use of nuclear weapons could be yet another means of escalation to more dramatic, destructive, and visually compelling violence. Alternatively, demonstrated acquisition of a nuclear weapon (e.g., by inviting in Western experts to view the device) would assert the ISIS claim to be the New Caliphate, gain legitimacy in its followers' eyes, and even possibly allow the group to engage in its own rudimentary version of nuclear deterrence.

For ISIS or any other terrorist group, acquisition of nuclear-weapons usable fissile material is the most important obstacle to making a crude, improvised nuclear device. Despite important progress during the Obama administration in strengthening global security over

civilian nuclear-weapon usable fissile material, gaps remain.[25] Similarly, questions persist concerning possible purchase, diversion, or theft of nuclear-weapons material, or even a nuclear device from a new nuclear power. Pakistan is most often mentioned in this connection, but the oft-predicted but never-occurring collapse of the North Korean regime could result in loss of control over nuclear weapons materials and even weapons.

Unprecedented Polarization—The NPT, the Humanitarian Movement, and Regime Uncertainties

The new administration will also face greater frustration among the parties of the Nuclear Non-Proliferation Treaty (NPT) than has ever existed in the nearly 50 years of that treaty's existence.[26] For many non-nuclear weapon states, this frustration is rooted in what at best is perceived as the very slow pace of implementation of the nuclear disarmament obligations of Article VI, and at worst could be seen by some as a purposive back-sliding by the nuclear-weapon states. These same states also reject the "step-by-step" approach to nuclear disarmament set out by the United States and other NPT nuclear-weapon states. They rightly argue that this approach offers only ad hoc next steps (e.g., a fissile material cutoff treaty), refuses to set out a longer-term vision of the elements of nuclear disarmament progress, and rejects calls for benchmarks or timelines toward a world without nuclear weapons. They also point to a lack of follow-through on past steps (e.g., the CTBT), as well as the overall bilateral and multilateral arms control stalemate.[27] As a result, many NPT non-nuclear-weapon states now talk of a need to fill a disarmament "legal gap" and to negotiate new agreements to implement the NPT's Article VI obligation. Spurred by non-governmental organizations (NGOs), a majority of such countries now support a go-it-alone negotiation of a nuclear-weapons ban without participation by the nuclear-weapon states. The fall 2016 meeting of the United Nations First Committee is expected to pass a resolution calling for the start of such negotiations on a Nuclear Weapons Ban Treaty in 2017.

Adding to the polarization, the 2015 NPT Review Conference also starkly revealed new fault lines between many non-nuclear-weapon states calling for accelerated progress on nuclear disarmament (and prepared to at least consider go-it-alone pursuit of a nuclear weapon ban) and those non-nuclear-weapon states that are allies of the United States. With growing concerns about Russia and China, respectively, U.S. allies have increasingly emphasized that pursuit of nuclear disarmament cannot be separated from the regional and global security situation.

In turn, although engagement among the five NPT nuclear-weapon states (the United States, Russia, the United Kingdom, France, and China) is now institutionalized in the so-called P5 process, they are also increasingly divided on many issues.[28] In particular, there are very different views on how to respond to the frustration among the non-nuclear-weapon states at the pace of nuclear disarmament. For their part, the NPT nuclear-weapon states are themselves frustrated, mostly with the refusal of many non-nuclear-weapon states to acknowledge that there has been progress in implementing NPT Article VI's nuclear disarmament obligations.

The emergence of the humanitarian impact of the nuclear weapons movement after the 2010 NPT Review Conference has transformed the nuclear disarmament debate within the NPT. 139 countries (excepting virtually all U.S. allies) now have endorsed the so-called Humanitarian Pledge, first put forward in 2014 by Austria at the conclusion of the third Humanitarian Impact conference in Vienna.[29] That pledge affirms that: ". . . the immediate, mid- and long-term consequences of a nuclear weapon explosion are significantly graver than it was understood in the past" and ". . . the risk of a nuclear weapon explosion is significantly greater than previously assumed and is indeed increasing . . . ."[30] Its adherents also pledge "to cooperate" and to "identify and pursue effective measures to fill the legal gap for the prohibition and elimination of nuclear weapons." For their part, all of the NPT nuclear-weapon states refused to participate in the first two Humanitarian Impact conferences in 2013 and 2014. By the time that the United States and the United Kingdom—but not Russia, France, and China—decided to participate in the 2014 Vienna conference, they were playing catch-up politically and it was too late to influence the emerging consensus among many non-nuclear-weapon states.

Although past references to the "NPT in crisis" have proved exaggerated, the challenges and dangers of this situation are real. This growing frustration and polarization could result in the steady erosion of the credibility, legitimacy, and effectiveness of the NPT as the central foundation for global non-proliferation efforts, norms, and institutions.

The Virtual Collapse of Multilateral Nuclear Disarmament

The multilateral nuclear disarmament process has been stalemated for more than twenty years. Repeated attempts by the United States and like-minded countries to begin negotiations at the Geneva Conference on Disarmament (CD) on a Fissile Material Cutoff Treaty (FMCT) have been unavailing, in large part due to opposition from Pakistan (with China in the background). The Comprehensive Test Ban Treaty

(CTBT) remains unratified by the United States and the eight other "nuclear-capable states" whose signatures and ratifications are the conditions for its entry into force. Even so, the International Monitoring System (IMS) created by the CTBT and run by the Comprehensive Test Ban Treaty Organization (CTBTO) is almost fully operational on an interim basis and has been providing valuable data.

Very differently, as noted above, some NPT non-nuclear-weapon states, spurred on by NGO activists, are campaigning for multilateral negotiation of a global ban on nuclear weapons. It would be no surprise if a small group of these countries were to decide to begin negotiations of a global ban treaty. The proponents of this go-it-alone approach almost certainly do not expect participation or eventual adherence by the nuclear-weapon states. Rather, their goals likely range from delegitimizing nuclear weapons and nuclear deterrence to creating the basis for another attempt to gain an Advisory Opinion from the International Court of Justice that nuclear deterrence and nuclear weapons are illegal in terms of International Humanitarian Law.

A Next Use of Nuclear Weapons

There are multiple, too real (if also uncertain and incalculable) pathways to the use of nuclear weapons for the first time in over 70 years. That next use could take place in an escalating U.S.–NATO–Russia military conflict in which President Putin throws the dice and seeks to use nuclear weapons to reverse defeat or even to achieve success. Growing tensions between the United States and China in the South and East China Seas are another pathway to potential crisis, confrontation, and outright conflict involving the two countries. Such an escalating conflict would include manifold opportunities for strategic miscalculation, all taking place under the nuclear shadow. Alternatively, triggered by provocative actions by Kim Jong-Un, open conflict could erupt on the Korean Peninsula and escalate to North Korean threats or use of nuclear weapons. Yet another military crisis between India and Pakistan could escalate and bring both countries to the brink of a regional nuclear war. Terrorist acquisition and use is one more conceivable pathway to a next use of nuclear weapons.

This risk of a next use of nuclear weapons, as the preceding brief sketch has made clear, is one of multiple challenges and dangers that make up the very different nuclear landscape that will confront the new U.S. President. Several of these developments were already in focus in 2009, e.g. nuclear proliferation challenges and the risk of nuclear terrorism. Many of them have taken shape or come into sharp focus subsequently, perhaps most importantly the growing confrontation with

a Russia re-infatuated with the threat, if not use, of nuclear weapons; the danger of U.S–China strategic competition; and unprecedented polarization within the global nuclear non-proliferation regime. These nuclear challenges and dangers provide the starting point as the new administration reflects on the legacy of President Obama's Prague speech and seeks to define its own agenda for nuclear disarmament.

[1] See the discussion in Brad Roberts, *The Case for U.S. Nuclear Weapons in the 21st Century* (Stanford, CA: Stanford University Press, 2016), pp. 11–50.

[2] For a discussion, see Olga Oliker, "Unpacking Russia's New National Security Strategy," Center for Strategic and International Studies, January 7, 2016.

[3] See Nikola N. Sokov, "Why Russia calls a limited nuclear strike 'de-escalation,'" *Bulletin of the Atomic Scientists*, http://thebulletin.org/why-russia-calls-limited-nuclear-strike-de-escalation. The same language was used in the 2014 version of the military doctrine.

[4] For a discussion of what he calls "Russia's theory of victory," including its nuclear dimensions, see Roberts, Ibid., pp. 128–138. Also see Elbridge Colby, "Russia's Evolving Nuclear Doctrine and its Implications," *Fondation pour la Recherche Strategique*, note n001/.2016, 12 January 2016.

[5] Sokov, op. cit..

[6] For this interpretation, see Steven Pifer, "Overblown: Russia's empty nuclear sabre-rattling," *The National Interest*, March 17, 2015.

[7] "Ukraine conflict: Putin was 'ready for nuclear alert,'" BBC News, 15 March 2015.

[8] "Russia threatens to aim nuclear missiles at Denmark ships if it joins NATO shield," Reuters, March 22, 2015.

[9] For a review of the issues confronting the Warsaw Summit, see Jeffery A. Larsen, "Time to Face Reality: Priorities for NATO's 2016 Warsaw Summit," Research Paper, Research Division, NATO Defence College, Rome, No. 126, January 2016.

[10] See "Speech by NATO Secretary General Jens Stoltenberg at the Munich Security Conference," 13 February 2016.

[11] See Stoltenberg, op. cit.

[12] For proposals for more dramatic nuclear changes, see, for example, Matthew Kroenig, "The Renewed Russian Nuclear Threat and NATO Nuclear Deterrence Posture," The Atlantic Council Issue Brief, February 2016.

[13] *Nuclear Posture Review Report*, April 2010, pp. ix–x.

[14] For a discussion of U.S. objectives in the Obama administration, and an interim assessment of results by a former Obama administration official, see Roberts, Ibid., pp. 147–152.

[15] The following draws on my participation over the past decade in a series of semi-official Track 1 ½ and Track 2 meetings with Chinese officials, think tank experts, and academics.

[16] On this last point, see Roberts, Ibid., p. 169.

[17] For one possible set of U.S. posture changes, all with implications for China, see John R. Harvey, "Commentary: Negating North Korea's Nukes," *Defense News*, February 15, 2016.

[18] The following discussion draws on conversations with my colleague, Greg Giles.

[19] See Joel S. Witt and Sun Young Ahn, *North Korea's Nuclear Futures: Technology and Strategy*, U.S.–Korea Institute at SAIS, February 2015.

[20] See Shane Smith, "North Korea's Evolving Nuclear Strategy," US–Korea Institute at SAIC August 2015. For an extended discussion of North Korea's "theory of victory," including nuclear threats and use, see Roberts, op. cit. pp.60–74.

[21] For a recent report, see Anna Fifield, "Push for nuclear weapons gains support in South Korea, *Washington Post*, March 21, 2016, p. A7.

[22] On the overall nuclear interaction between India and Pakistan, see Michael Krepon and Julia Thompson (eds.), *Deterrence Stability and Escalation Control in South Asia*, the Stimson Center, 2013 and with an assessment of Pakistan's expanding capabilities for battlefield use of nuclear weapons (but also alternatives to that course of action), see Toby Dalton and Michael Krepon, *A Normal Nuclear Pakistan*, the Carnegie Endowment for International Peace and the Stimson Center, 2015.

[23] See James R. Clapper, Statement for the Record, Worldwide Threat Assessment of the US Intelligence Community, Senate Select Committee on Intelligence, p. 8.

[24] See Beatrix Immenkammp, "ISIL/Da'esh and 'non-conventional weapons of terror,' " Briefing, European Parliamentary Research Service, December 2015.

[25] For an overall assessment of the global nuclear security state of play, see Nuclear Threat Initiative, *NTI Nuclear Security Index Theft/Sabotage*, January 2016.

[26] This judgment is based on over three decades of working on NPT issues; it is shared by other persons long-involved in this area.

[27] Indeed, by the time of the 2015 Review Conference, U.S. officials had stopped referring to the need for a step-by-step approach, effectively acknowledging it had proved a "non-seller."

[28] For a discussion of the 2015 NPT Review Conference, including the divisions, see William C. Potter, "The Unfulfilled Promise of the 2015 NPT Review Conference," *Survival*, Vol. 58, No. 1, pp. 151–178.

[29] The first conference was held in Oslo in 2012; the second conference in Nayarit outside of Mexico City in 2013.

[30] See Conference on Disarmament, CD/2039, 28 August 2015, "Note verbale dated 25 August 2015 from the Permanent Mission of Austria"

Why Not Walk Away from a U.S. Nuclear Disarmament Agenda?

The new administration will need to decide whether to walk away from the goal of nuclear abolition, or even from a redefined U.S. agenda for nuclear disarmament. For some persons, the answer would be "yes" given the disappointments of the Prague vision, the stalemate of bilateral U.S.–Russian arms control, Chinese unwillingness to launch a process of U.S.–China mutual strategic reassurance and restraint, the virtual collapse of multilateral disarmament, and the heightened importance of nuclear deterrence in Europe and Asia. To the contrary, there are compelling political and strategic arguments that the continued pursuit of a U.S. nuclear disarmament agenda would serve U.S. interests and should be one part of a comprehensive response to those very nuclear challenges and dangers. However, as will be explored fully below, that agenda needs to be redefined in light of the nuclear challenges and dangers facing the new administration and of the obstacles to nuclear abolition. Consider very briefly the most important arguments, which are laid out in the remainder of this section.

Sustaining Domestic and Alliance Support for a New Nuclear Consensus

There is now a fragile center-right political consensus for modernizing the U.S. strategic force posture and nuclear infrastructure. But that consensus has opponents in Congress, the think-tank community, and the broader American public (whose opposition will grow as difficult funding decisions must be made). Giving up on bilateral arms control with Russia as one element within a redefined nuclear disarmament agenda would likely further increase that opposition, as would walking away from efforts to strengthen U.S.–China strategic reassurance and restraint. In contrast, articulating a U.S. nuclear disarmament agenda would likely strengthen efforts to widen political support for that consensus by offering an alternative to endless nuclear competition, which carries with it an increasing risk of nuclear use.

Continuing to put forward a U.S. nuclear disarmament agenda would also buttress efforts to revitalize the nuclear dimension of

NATO's overall deterrence posture. Renewed efforts to offer Russia a cooperative pathway forward are already one half of NATO's dual-track approach. Moreover, past experience suggests that it is likely to be easier to gain government, parliamentary, and public acceptance of NATO nuclear revitalization if the United States is seen putting forward a U.S. vision of an achievable nuclear disarmament future.

Shifting to Asia, strategic cooperation between the United States and Japan increased considerably during the Obama administration. Nonetheless, with its underlying nuclear dimension, that cooperation with the United States also remains controversial among some parts of the Japanese public and political establishment. As in the past, the ability to point to U.S. pursuit of nuclear disarmament will support efforts by the Japanese government to answer such critics. Support for U.S.–China mutual strategic reassurance and restraint can help reduce concerns within the Japanese public and government that Japan could be dragged into heightened U.S.–China strategic competition, if not outright conflict.

Regulating the U.S.–Russia Strategic Relationship and Avoiding U.S.–China Strategic Competition

Strengthening of the overall U.S.–NATO deterrence posture is essential to dissuading Russian adventurism. At the same time, it remains in the U.S. interest to sustain existing nuclear arms control agreements with Russia and, if possible, to revitalize the bilateral arms control process. Increasingly unregulated strategic competition between Washington and Moscow would be costly, uncertain, and dangerous in its own right, as in its impact on the wider political relationship. It also would make it harder to sustain alliance cohesion and would also give greater credibility to those NPT non-nuclear-weapon states that are calling for go-it-alone nuclear disarmament actions.

In a closely related matter, efforts to convince Putin's Russia that Presidents Reagan and Gorbachev got it right when they declared that "a nuclear war cannot be won and must not be fought" are needed. To achieve that objective, however, a more robust U.S. and NATO nuclear deterrence posture is necessary to disabuse Putin of the view that the threat or use of nuclear weapons is a pathway to success in a U.S.-NATO-Russia military confrontation. But in ways also discussed below, enhanced deterrence should be complemented by very direct messages about the adverse repercussions on Russia's own interests that would result from a U.S. belief that Putin thinks nuclear weapons are usable. That message would be part of a properly crafted, redefined nuclear disarmament agenda.

Efforts to prevent growing U.S.–China strategic competition through a process of mutual reassurance and restraint within a redefined agenda would also serve the interests of both the United States and China. To the disadvantage of both Beijing and Washington, widening strategic competition would divert resources needed for domestic purposes, make it more difficult to successfully manage the competitive aspects of the relationship, and would conversely impede the cooperation necessary to meet shared global challenges. Growing strategic competition would also reinforce worst-case thinking in both countries that would heighten the risk of miscalculation and conflict in the event of a future regional incident or crisis.

Protecting the Global Non-Proliferation Regime

Putting forward a U.S. agenda for nuclear disarmament would also serve U.S. interests in a credible and effective global nuclear non-proliferation regime. Past nuclear disarmament actions—or lack of actions—have had very little to do with the motivations of those countries that have acquired nuclear weapons. The Obama administration also rightly tested, but with little success, the proposition that by acting more on nuclear disarmament the United States would gain more support from non-nuclear-weapon states on non-proliferation. Nonetheless, there is little doubt that a U.S. decision to walk away from nuclear disarmament would heighten the divisions within the NPT, reinforce the narrative and position of go-it-alone activists, and make it all but inevitable that the breakdown of the 2015 NPT Review Conference would be followed by a much more damaging collapse of the 2020 NPT Review Conference. Sooner than anticipated, there would likely be an erosion and hollowing out from within the NPT, significantly weakening what has long been acknowledged to be the centerpiece of U.S. and global non-proliferation efforts.

Reducing the Risk of a Next Use of Nuclear Weapons

Finally, although the claims of the humanitarian movement are exaggerated, a next use of a nuclear weapon almost certainly would directly and indirectly impact the United States. A next use could be against American forces, an American ally or friend, or even the American homeland. The indirect impacts could include global economic disruption, environmental degradation, and heightened public opposition to nuclear weapons at home and in U.S. allied nations. Accelerated proliferation and a more fundamental breakdown of the taboo against nuclear use are both conceivable.

Moreover, the solutions proposed to reduce this risk by the humanitarian movement and the advocates of nuclear deterrence, respectively, are inadequate. For political, military, technical, and institutional reasons, the humanitarian movement's overall preferred solution of the abolition of nuclear weapons is unachievable in the present, if not for the foreseeable future. The movement's almost exclusive, more immediate focus on the de-alerting of nuclear forces does not address the most plausible pathways to a next nuclear use, whether adventurism, miscalculation, desperation by a state, or ideological malevolence perpetrated by terrorist groups. Conversely, the solution put forward by nuclear deterrence advocates of a perpetual reliance on the threat of retaliation is too uncertain to be fully reassuring. Frequent claims for nuclear deterrence have to be tempered by acknowledgement of the role of specific leaders; the role of outside good offices; and the role of luck in successfully managing past nuclear crises, from the Cuban Missile Crisis to the recurrent crises under the nuclear shadow between India and Pakistan. Looking ahead, the all-too-present existence of triggers to confrontation, crisis, and possibly even conflict between nuclear powers; the technical uncertainties in some situations; the challenges and dangers of miscalculation and errors of human judgment; and, quite simply, the historic experience of things going wrong, all suggest a need for caution in assuming that nuclear deterrence always will work in the decades to come.

For this final reason above all, the new U.S. President should not simply walk away from the articulation and pursuit of a U.S. agenda for nuclear disarmament within a more comprehensive nuclear policy and posture. Rather, U.S. interests would be served better by crafting a redefined agenda that reflects the challenges and dangers of the global nuclear landscape, as well as the obstacles to the Prague Speech's vision of nuclear abolition. Its guiding purpose should be to reduce those nuclear dangers, including those of a next use of nuclear weapons. The following sections turn to one proposal for such a redefined U.S. agenda for nuclear disarmament.

A Strategy of "Looking Long and Throwing Short"—Defining a U.S. Vision of the 2045 Nuclear Future

A redefined U.S. agenda for nuclear disarmament should adopt a strategy of "looking long and throwing short".[31] On the one hand, the new President should "look long" and provide an American vision of a desirable and realizable nuclear world of 2045, a year which marks the 100th anniversary of the first and only use so far of nuclear weapons. On the other hand, the new administration should "throw short" and pursue near-term initiatives to address today's nuclear challenges and dangers, as well as to begin to put in place the building blocks that will realize the American look-long vision. This section discusses the former dimension; the next section explores the latter.

A Strategy of "Looking Long and Throwing Short"—The Look-Long Vision

The core of an American look-long vision of the nuclear future should be a world of 2045 in which nuclear weapons have been *strategically eliminated* but not completely abolished, dismantled, and eliminated physically. That is, to adapt one established definition of strategy, nuclear weapons would no longer be an element of ". . . us[ing] . . . all of the relevant instruments of power as threats or in action, for the objectives of statecraft."[32] Some limited numbers of residual nuclear weapons would still exist in 2045, but nuclear weapons overall would have been eliminated as instruments of national strategy and power. Metaphorically, they would have been moved to the back room or into cold storage. The 100th anniversary of the atomic bombings of Hiroshima and Nagasaki is used as the benchmark because that date will be of great international political salience and stocktaking. It is also sufficiently far into the future—just under 30 years—that the necessary building blocks of this look-long vision could be sufficiently realized to make such a dramatic change possible, or at least to make considerable progress toward that change. Such strategic elimination of nuclear weapons would have more specific policy, operational, institutional, and international dimensions.

The Policy, Operational, Institutional, and International Dimensions of Eliminating Nuclear Weapons Strategically as Means of Statecraft

From a *policy perspective*, reliance on policies of nuclear deterrence would no longer be seen as essential to protect national survival or other existential interests, whether on the part of today's nuclear-weapon states or of potential newcomers. Particularly for the United States, nuclear weapons would have also ceased to be an essential means of extended deterrence and alliance reassurance. Nuclear weapons would no longer be seen, at least in American thinking, as necessary hedges against the use of biological or chemical weapons. For still others, nuclear weapons would not be viewed as a means of last resort insurance in a hostile regional environment. The threat or use of nuclear weapons would be excluded as a national policy option, although the possibility of terrorist use might remain. Political, technical, institutional, and psychological uncertainties, instead of security concerns, would preclude the adoption of policies supporting the complete physical elimination of nuclear weapons.

Operationally, in this 2045 world, levels of nuclear weapons would have been reduced to minimum residual levels. Nuclear warheads would no longer be operationally deployed but would be retained in secure storage in the national territories of their possessor countries. Nuclear delivery systems would no longer be on alert and, if consistent with safety protocols, would be retained in a semi-mothballed status. There would be no nuclear weapon testing, although programs would remain to ensure the safety and security of residual nuclear weapons.

Institutionally, day-to-day national and alliance nuclear planning would have ceased. Some nuclear weapons production infrastructure would still exist. However, this remaining infrastructure would be devoted to dismantling warheads that had been eliminated, refurbishing residual warheads in a one-for-one replacement process as needed for safety and security, and providing a political-psychological hedge against unexpected developments. Other infrastructure would be decommissioned or eliminated, and investments in the modernization of residual nuclear weapons and nuclear delivery systems would have stopped. However, programs would continue to retain skilled nuclear-weapon designers who would be able to assess and certify the safety and security of remaining nuclear warheads.

At the national and the *international* level, a network of transparency and verification arrangements would exist, covering the full spectrum of nuclear-weapon related programs, capabilities, and activities. Their primary purpose would be to provide confidence to

both nuclear- and non-nuclear-weapon states that nuclear weapons had been strategically, operationally, and institutionally eliminated.

Across each of these dimensions, there are *conceivable way-stations toward the strategic elimination of nuclear weapons.* Focusing only on the policy dimension, for example, way stations could include: pledges of no nuclear threat-making, an affirmation that any threat or use of nuclear weapons would only be contemplated as a last resort, the adoption of doctrines affirming that the sole purpose of nuclear weapons is to deter use of other nuclear weapons, and no-first-use commitments. These way stations would provide flexibility for today's nuclear-weapon states to phase pursuit of strategic elimination in a manner consistent with progress, putting in place the necessary building blocks for that goal's realization. They also would allow for possible adaptations to successes and failures in its pursuit, temporary halts, and even a rethinking of the goal itself.

A Conundrum—To Reaffirm or Not to Reaffirm the Goal of Nuclear Abolition?

This look-long vision of strategic elimination leaves open whether a redefined U.S. agenda for nuclear disarmament should explicitly reaffirm the goal of nuclear abolition. Legally, Article VI of the NPT obligates all NPT Parties "to pursue negotiations in good faith on effective measures relating to cessation of the nuclear arms race at an early date and to nuclear disarmament, and on a treaty on general and complete disarmament under strict and effective international control." This language is now seen by virtually all NPT Parties to require not simply "negotiations in good faith" but results.[33] Politically, critics at home of the Prague vision would welcome a decision not to reaffirm nuclear abolition while supporters would not. Abroad, any new U.S. nuclear disarmament agenda that does not reaffirm in some way the goal of nuclear abolition would be sharply criticized by many NPT non-nuclear-weapon states even if they also welcomed its more specific elements. Practically, however, a great many tough challenges would need to be overcome to put in place the political, technical, and institutional building blocks to realize the even more limited but very ambitious vision of strategically eliminating nuclear weapons by 2045.

Balancing these considerations, the look-long vision proposed here would reaffirm the U.S. commitment to achieving results in implementing the Article VI goal of nuclear disarmament, a commitment reaffirmed repeatedly by U.S. Presidents. It also would reaffirm the pledge made at the 2000 NPT Review Conference of "an unequivocal undertaking

by the nuclear-weapon states to accomplish the total elimination of their nuclear arsenals leading to nuclear disarmament."[34] However, it would also emphasize that the first priority should be to *strategically* eliminate nuclear weapons as instruments of statecraft and affirm the American commitment to work cooperatively with other NPT Parties to put in place the necessary building blocks to realize the look-long vision by 2045. In articulating this look-long vision, U.S. officials would remain agnostic as to when the complete physical abolition of nuclear weapons could ever be achieved.

Getting from Here to the 2045 Vision—What Are the Building Blocks?

A world of 2045 in which nuclear weapons have been strategically eliminated would most definitely be a stretch goal for a redefined U.S. nuclear disarmament agenda. What are the building blocks that, if put in place, would make realization of that vision possible, or at least very significant progress toward that vision?[35]

Perhaps the most immediate building block is to *manage and reduce the nuclear challenges and dangers of today's nuclear landscape.* In this regard, a heightened risk of military confrontation or even conflict between the United States and NATO and Russia, growing strategic competition between the United States and China, or any one of several possible proliferation-related crises all stand out.

Successful efforts *first to ameliorate and then eventually to resolve those regional and global political conflicts that have a nuclear dimension is a closely related building block.* Even now, reversing the growing trend of East–West political and military confrontation, for example, would clearly enhance the prospects for Moscow's agreement to revitalize the bilateral arms control process as part of pursuing the look-long vision. Over time, all of today's NPT and non-NPT nuclear-weapon states will lessen and then eventually set aside a very visible reliance on nuclear weapons and nuclear deterrence only as they come to believe that they do not face threats to their own national survival, existential interests, or those interests of their non-nuclear allies that can be met only with such nuclear means. It will also be essential to reduce and then neutralize the lesser fears prevalent among some of today's nuclear-weapon states of their becoming a victim of nuclear coercion.

At the same time, historic experience suggests that some initial progress toward the look-long vision should be possible even without such fundamental political and security changes, if countries believe progress toward this goal is in their interests. The 1963 Limited Test Ban Treaty (LTBT) was negotiated at the height of the Cold War

when both Moscow and Washington decided to send a signal of mutual restraint after the shock of the Cuban Missile Crisis. The SALT I Interim Agreement and the ABM Treaty details were finalized and both signed at the May 1972 Moscow Summit, even though in April 1972, the U.S. Vietnam War bombing of Haiphong Harbor had damaged four Soviet supply ships (and killed one seaman) and just before the Summit, in May 1972, the United States had mined that harbor.[36] In turn, the 1985 resumption of negotiations on INF and strategic weapons occurred in the midst of continuing political-military confrontation in Europe.

The full realization of the look-long vision, however, need not presuppose the complete end of all political-military competition, confrontation, and disorder, either among today's nuclear-weapon states or globally. Since President Truman's rejection of the use of nuclear weapons during the Korean War, every one of today's nuclear-weapon states has implicitly and sometimes explicitly recognized that the threat of, let alone the use of, nuclear weapons is not the means for dealing with each and every possible security threat or challenge.[37] Nuclear weapons have constrained utility. In some specific cases, that recognition reflects an assessment of risk, but in other cases, it also reflects an appreciation of nuclear weapons as fundamentally different because of their potentially great, indiscriminate, and persistent destructiveness.[38] Indeed, one reason for concern about Putin's gratuitous nuclear saber-rattling is that it suggests a possible break with this many decades-long appreciation of the constrained utility of nuclear weapons.

The development of *shared—or at least harmonized—concepts of strategic stability and of the roles of nuclear weapons* is another building block. With regard to the former, secure, controlled, and survivable retaliatory postures remain central. With regard to the latter, a reaffirmed belief on the part of all of today's nuclear-weapon states that nuclear weapons are, in the final analysis, too dangerous to be used would be a core element. Harmonizing concepts of strategic stability over time would be one foundation for an operational reassessment of the requirements for robust, highly visible nuclear deterrent postures. It would also support a steady narrowing of the roles to be played by nuclear weaponry.

Still another building block would be a growing *availability of alternative means to manage those security threats now thought to require reliance on nuclear weapons or to have a nuclear dimension.* The availability of alternative conventional means has already led the United States to substitute those weapons for some former nuclear missions,

and missile defenses have also come to complement nuclear weapons as a U.S. means of reassurance and extending deterrence. For countries as different as Russia and Pakistan, similar considerations may apply over time. There may sometimes also be a more basic reassessment of whether a given security threat actually requires reliance on nuclear weapons, for example, as exemplified by the lessened U.S. reliance on nuclear weapons to deter use of chemical or biological weapons under the Obama administration.

For countries as diverse as Russia, the United Kingdom, France, and India, *a continued weakening of the perceived linkage between nuclear weapons possession and great power status* could ease their acceptance of the goal of strategic elimination. In this regard, moreover, there is an important asymmetry between the United States and these other nuclear-weapon states. Even in the 2045 world of strategic elimination, however, such states still would be set apart by their residual nuclear postures to the extent that these remain a consideration.

Successful non-proliferation actions are a different building block. If only for political and psychological reasons, the five NPT nuclear-weapon states are likely to be unwilling to eliminate their own nuclear weapons strategically unless they remain confident that they will not confront additional, possibly hostile new nuclear-weapon states. Successful non-proliferation will call for strengthened cooperation among all of the NPT's Parties to support today's global non-proliferation institutions, to adapt those institutions to future technological changes, and to ensure all countries' compliance with their non-proliferation obligations. Even in the near-term, greater cooperation would also enhance the readiness of NPT nuclear-weapon states to pursue nuclear disarmament by demonstrating that doing so has NPT payoffs.

Many *confidence-building, transparency, verification, and related technology development activities* will also be necessary. Without confidence in partners' compliance with current and future nuclear arms control and disarmament agreements, progress toward the 2045 vision will slow and ultimately stop. Greater nuclear transparency is another dimension, from intentions to decision-making, programs to plans, and past to future capabilities. Another dimension is the development of new concepts and technologies that will verify future agreements.

International institution-building will also be needed to help transcend today's political and security conflicts, provide confidence that agreements are being implemented, and build broader habits of cooperation among nuclear-weapon states. Institution-building may be global, e.g., strengthening the Security Council's role in dealing with future threats to the peace, dealing with security challenges, and in backstopping non-

proliferation. Or it may be regional, e.g., restoring the credibility and effectiveness of Europe-wide security institutions as well as strengthening existing and forging new political-security institutions in Asia. Sustaining the effectiveness of international entities, represented in the nuclear area by the International Atomic Energy Agency (IAEA) and the Comprehensive Test Ban Organization (CTBTO) will be particularly important for compliance confidence-building.

Strengthened *domestic regime legitimacy and stability* in some of today's nuclear-weapon states is another building block. At one level, as in the case of Russia but to some degree also China, strengthened regime legitimacy is important to offset exaggerated concerns about foreign threats as well as to reduce the need to appeal to popular nationalism to help sustain the regimes. It would also facilitate adoption and implementation of greater nuclear transparency by both China and Russia. In turn, prospects for the eventual denuclearization of North Korea cannot be separated from future domestic political and economic changes.[39] Perhaps most typified by the situation of Pakistan, strengthened regime legitimacy would weaken domestic forces that have repeatedly sought to block improved relations with India, and which remain a potential inciter of cross-border instability.[40]

Coursing throughout each of the preceding building blocks is a final one: *the readiness of the other nuclear-weapon states to work cooperatively with the United States in advancing this look-long vision.* Initially, such cooperation would especially be needed from Russia and China to address the more immediate challenges and dangers, including

Building Blocks of Strategic Elimination

- Management and reduction of today's nuclear challenges and dangers
- Amelioration, then resolve of regional and global political conflicts with a nuclear dimension
- Shared or harmonized concepts of strategic stability and roles of nuclear weapons
- Alternative means to manage security threats now thought to require reliance on nuclear weapons or with a nuclear dimension
- Continued weakening of perceived linkage between nuclear weapons possession and great power status
- Successful non-proliferation
- Confidence-building, transparency, verification, and related technology development
- International institution-building
- Strengthened domestic regime legitimacy and stability
- Readiness of the other nuclear-weapon states to work cooperatively with the United States in advancing the look-long vision of strategic elimination

in the U.S.–Russia and U.S.–China strategic relationships. The concerns of France, and to a lesser extent the United Kingdom, would need to be overcome—these fears being that starting down this road of a more ambitious nuclear disarmament agenda would undermine the domestic legitimacy of and political support for their own current nuclear deterrence postures. Over time, there also would need to be a more fundamental political judgment, first among the NPT nuclear-weapon states and then more widely, that moving toward the look-long vision is the best approach to serve their political, security, and economic interests. Ultimately, unless hold-outs can be brought along, at some point the process would almost certainly become politically untenable. When that point would occur, however, is uncertain, and is quite likely to be seen differently from nuclear-weapon state to nuclear-weapon state.

Getting from Here to There—Can the Building Blocks Be Put in Place?

Different persons will judge for themselves the prospects for putting in place the building blocks needed to realize the strategic elimination of nuclear weapons by 2045, or at the least to make very substantial progress toward this goal. There is little doubt that doing so would be a significant and extended challenge. Nonetheless, any such judgments need to reflect the important differences among these building blocks. Some of them already exist or are now being put in place incrementally. Others are challenging but are primarily of a technical nature or raise political issues that should not be insurmountable. Still others, however, would require very significant political-military changes compared to today's world. Even those changes, however, are not outside the realm of what has occurred historically or has been brought about by nations motivated by enlightened self-interest, sometimes in response to dramatic political-military shocks. Indeed, the impact of future *strategic shocks* is a critical wild card that must be considered.

More specifically, repeatedly since 1945, strategic shocks have been the midwife of both large and small strategic, military, political, and institutional transformations. The destruction wrought by World War Two contributed directly to a historic change in Franco-German relations and the creation of a new western European political-economic order. Having looked directly into the potential catastrophe of a global nuclear war in the Cuban Missile Crisis, the United States and the Soviet Union went forward six months later to sign the Limited Test Ban Treaty and to begin a more comprehensive process to regulate their nuclear relationship. A decade later, India's 1974 test of a nuclear weapon dramatically energized global non-proliferation efforts,

much as would the discovery another two decades later of Saddam Hussein's mini Manhattan Project. In turn, the fallout and radiation contamination from the 1986 Chernobyl nuclear power plant accident may have contributed in its own way to a Soviet reassessment of the usability of nuclear weapons and the ensuing Reagan-Gorbachev injunction that a nuclear war cannot be won and must not be fought.

Looking across the three decades from 2017 to 2045, it is almost certain that one or more crises, confrontations, or perhaps even limited conflicts could occur involving today's nuclear-weapon states. A terrorist use of a nuclear weapon also is possible. The impact of these potential events is uncertain. Depending on its specifics, a future shock could derail the pursuit of strategic elimination of nuclear weapons. Conversely, it could vitalize efforts to put in place these building blocks and energize pursuit of that 2045 world.[41]

The Case for Making Strategic Elimination the Lodestar for a Redefined U.S. Nuclear Disarmament Agenda

Even if views differ on whether it would be possible to put in place these necessary building blocks, there would still be important benefits for the new administration from setting out a redefined nuclear disarmament agenda, including the look-long vision proposed here. Those benefits were explored above. Suffice it only to recall that doing so would strengthen and contribute to the more comprehensive set of U.S. policies that address today's nuclear challenges and dangers. A look-long vision of strategic elimination also would be much more effective in bridging the dangerous polarization within the NPT community. Unlike the step-by-step approach, the look-long vision defines a detailed goal of strategic elimination, sets out way stations toward that goal's achievement, identifies necessary building blocks, and not least, would seek to realize that goal by a specific date—2045, one hundred years after the previous use of atomic weapons. For all of those reasons, a U.S. decision to articulate this look-long vision is very likely to be welcomed by many, if not most, NPT non-nuclear-weapon states. This is so despite the likelihood there will be criticism of the fact that this vision stops short of a commitment to the physical elimination of nuclear weapons by 2045, or some other certain date. In ways to be explored below, the pursuit of a look-long vision toward strategic elimination of nuclear weapons by 2045 would contribute to the vital goal of ensuring that nuclear weapons are never used again.

[31] I owe this phraseology of "looking long and throwing short" to Alton Frye, then of the Council on Foreign Relations, whom I first heard use it some decades ago.

[32] This particular definition is that of Colin Gray. See Colin S. Gray, *Modern Strategy* (Oxford University Press, 1999), p. 17.

[33] The International Court of Justice in its discussion of Article VI of the NPT in its 1996 advisory opinion on the legality of threat or use of nuclear weapons also emphasizes the need for results, or in its words, "bring to a conclusion" also is the judgment of the See the discussion of the 1996 ICJ opinions in Michael J. Matheson, "The Opinions of the International Court of Justice on the Threat or Use of Nuclear Weapons, *American Journal of International Law*, 91 Am. J. Int'l L. 417, July 1997.

[34] 2000 Review Conference of the Parties to the Treaty on the Non-Proliferation of Nuclear Weapons, Final Document, NPT/CONF.2000/28 (Parts I and II), New York, 2000.

[35] For a related discussion of the "conditions" in their construct for abolishing nuclear weapons that has influenced what follows, see George Perkovich and James M. Acton, *Abolishing Nuclear Weapons: A Debate*, (Washington, DC: Carnegie Endowment for International Peace, 2009), especially Section 1. For a more skeptical view, see Christopher A. Ford, "Why Not Nuclear Disarmament?" *The New Atlantis*, Spring, 2010.

[36] See W.L. Greer, "The 1972 Mining of Haiphong Harbor: A Case Study in Naval Mining and Diplomacy," Institute for Defense Analyses, April 1997, p. 8.

[37] Other U.S. and Russian examples would include: the Eisenhower administration in Korea and in French Vietnam, the Kennedy–Johnson administration in Vietnam, and the Bush administration after 9/11 as well as the Brezhnev regime in Afghanistan.

[38] In that regard, President Truman's grandson has recently stated that the reason for Truman's rejection of use of nuclear weapons during the Korean War was their destructiveness as evidenced by their use against Japan. See Yonhap News Agency Interview, "Truman did not use nukes in Korean War due to devastation: grandson," 2015/06/23.

[39] See the discussion below under regional issues.

[40] This importance of regime legitimacy raises two difficult questions for the United States that are explored below. How much does the success of efforts to manage, then ameliorate, and if possible, ultimately resolve the political-military confrontation between the United States and Russia and to avoid a growing confrontation between the United States and China depend on a U.S. readiness to make clear to both countries' leaderships that the U.S. goal is not to overturn their political-economic regimes? And if so, is there a credible way to send that message?

[41] This uncertainty is perhaps most evident in the case of the most dramatic strategic shock that could occur, a next use of nuclear weapons. A next use could strengthen resistance to moving down the path posited here. Or conversely, a next use of nuclear weapons could create unprecedented urgency and momentum behind pursuit of a nuclear world in which nuclear weapons no longer were instruments of statecraft.

A Strategy of "Looking Long and Throwing Short"—Actions and Initiatives

The "throwing short" dimension of the proposed strategy, as shown by the accompanying matrix (following page), comprises three baskets of actions and initiatives. These respective baskets are to: set out the U.S. nuclear disarmament strategy, vision, and commitment; sustain, revitalize, and/or deepen and extend existing bilateral and multilateral arms control and nuclear disarmament-related agreements, structures, and processes; and to develop and put in place disarmament implementation and verification concepts, technologies, and institutions at multiple levels. Taken together, these actions and initiatives bring a nuclear disarmament component to bear in reducing nuclear challenges and dangers, while pursuing the building blocks of the look-long vision.

Set Out U.S. Strategy, Vision, and Commitment for Nuclear Disarmament

The starting point would be to reaffirm the role of nuclear disarmament within the more comprehensive U.S. response, and to articulate a detailed vision of an achievable nuclear disarmament future. This paper has already proposed its own look-long vision centered on the strategic elimination of nuclear weapons as means of statecraft by 2045. There is no need to revisit that argument here.

A Continued U.S. Commitment to Strategic Restraint and Engagement if Reciprocated

It is very likely that the new administration will undertake its own Nuclear Posture Review (NPR). That review's central focus will almost certainly be on policies for revitalized nuclear deterrence and sustained nuclear modernization. At the same time, a new NPR will raise some important choices for the new administration related to whether or not to reaffirm elements of the 2010 NPR in a manner supportive of a redefined agenda for nuclear disarmament.

"Throwing Short" — Responding to Nuclear Challenges and Dangers, Putting in Place Building Blocks of the Look-Long Vision

Challenges, Dangers, and Building Blocks / Disarmament Actions and Initiatives	More Immediate Challenges and Dangers				
	Confrontation with Russia under a darkening nuclear shadow	A growing danger of U.S–China strategic competition	Evolving proliferation country challenges	NPT polarization –after the Prague vision	A next use of a nuclear weapon
Set out: U.S. strategy and vision	●	●		●	●
Continued U.S. commitment to strategic restraint and engagement—if reciprocated by other major powers	●	●		●	
Sustain, Revitalize, and/or Deepen and Extend: Bilateral U.S.–Russia nuclear arms control process	●	●		●	●
A U.S.–Russian belief that a nuclear war cannot be won and must not be fought	●		●	●	●
U.S.–China strategic dialogue, mutual reassurance, and restraint		●		●	
Deepen and extend the P5 Process	●	●	●	●	●
Go beyond the multilateral disarmament stalemate			●	●	
Engagement with NPT non-nuclear- weapon states				●	
Regional nuclear threat reduction—beyond Europe			●		●
Develop and Put in Place: Disarmament implementation and verification concepts/technologies				●	
Disarmament compliance and institution confidence-building					

Other Near to Longer-Term Building Blocks					
Transforming regional and global political-security perceptions and realities	Reshaping thinking about nuclear weapons roles and usability	Non-proliferation success	Confidence, transparency, and verification building	International institution building	Greater domestic regime legitimacy and stability
	●				
●					●
●	●		●		●
	●				
●	●		●		●
●	●	●	●	●	
				●	
		●	●	●	
●	●	●			
			●	●	
			●	●	

Whether to reaffirm the 2010 NPR's goal of *"high-level, bilateral dialogues on strategic stability with both Russia and China which are aimed at fostering more stable, resilient, and transparent strategic relationships"* is one such choice.[42] There are good reasons to do so. For Russia, reaffirmation would keep open the door of a cooperative resolution of deep strategic differences between the two countries and would also be consistent with NATO's dual-track approach to countering Russian adventurism. It would also reflect U.S. interests—and those of Russia—in sustaining and extending more than fifty years of using arms control to regulate and make safer the U.S.–Russia strategic relationship. For China, it would signal the new administration's readiness to pursue cooperative approaches for reducing mutual strategic concerns, uncertainties, and suspicions.

A different choice is whether to reaffirm the earlier commitment that *"[t]he United States will not develop new nuclear warheads. Life Extension Programs (LEPs) will use only nuclear components based on previously tested designs, and will not support new military missions or provide for new military capabilities."* Arguments against reaffirmation are likely to emphasize a putative need to provide more tailored and discriminate nuclear options to buttress U.S. and NATO nuclear deterrence posture. Those arguments, however, are outweighed by the sufficiency of existing nuclear capabilities as well as the adverse spillovers for sustaining U.S. nuclear modernization and NATO nuclear revitalization. Persistent congressional opposition to new nuclear capabilities that are perceived as more usable strengthens the case for continued restraint. Reaffirming this commitment would also enhance the credibility at home and abroad of a redefined U.S. nuclear disarmament agenda.

The 2010 NPR also rejected calls that the United States *". . . adopt a universal policy that the 'sole purpose' of U.S. nuclear weapons is to deter nuclear attack on the United States and our allies and partners."* It then stated that the United States "will work to establish conditions under which such a policy could be safely adopted."[43] At some future point, a "sole purpose" policy would become a way-station toward the strategic elimination of nuclear weapons. Now, a new NPR should not make this change, particularly given the likelihood that the shift would be misread by a Putin's Russia possibly prepared to use conventional military force against its neighbors and thinking seriously about the usability of nuclear weapons. However, a new NPR would offer the opportunity to set out more explicitly what conditions would allow a U.S. shift to a "sole purpose" policy. This step would direct attention to today's nuclear dangers, and it again would add credibility to the look-long vision of strategic elimination.

One final choice concerns the commitment in the 2010 NPR *". . . to maximize the time available to the President to consider whether to authorize the use of nuclear weapons."*[44] In parallel, the earlier NPR rejected proposals for the so-called "de-alerting" of all U.S. strategic nuclear forces. Since 2010, those proposals have persisted.[45] De-alerting is also frequently proposed by many NPT non-nuclear-weapon states to reduce the risk of a next use of a nuclear weapon.[46] At this point in time, good reasons remain not to change the alert status of U.S. nuclear forces.[47]

However, the new administration should use a new NPR to change the terms of the de-alerting debate by proposing official-level discussions, first among the United States and Russia, then more widely among all of today's declared nuclear-weapon states on the full range of measures to reduce the risk of a next use of nuclear weapons to an absolute minimum. Areas for discussion could include: warning time; doctrine and force posture; crisis avoidance and crisis management; exercises and other operational practices (including launch-under-attack); and confidence-building and transparency. Actionable recommendations would be sought. If an official-level undertaking were thought impractical in today's political climate, an alternative would be to constitute a senior-level, "gray-beard" group of retired officials from the United States and Russia (or even from all P5 countries) to address risk reduction and make recommendations.

Sustain, Revitalize, and/or Deepen and Extend Existing Bilateral and Multilateral Structures, Processes, and Agreements

Sustaining, revitalizing, and then deepening or extending the existing fabric of today's bilateral and multilateral arms control and disarmament structures, processes, and agreements can both contribute to meeting today's nuclear dangers and be a stepping stone toward the look-long vision. A number of priorities stand out for this aspect of the throw-short dimension.

Sustain, Reawaken, and Revitalize the Bilateral U.S.–Russia Nuclear Arms Control Process

During the Cold War, bilateral U.S.–Russian arms control signaled and institutionalized commitments to nuclear restraint, provided necessary transparency and insights into each country's thinking about nuclear weapons, and, on balance, helped to contain offense-defense strategic competition (although this last is still controversial).

With Russian Prime Minister Medvedev warning of a "new Cold War,"[48] these purposes are all the more important for both countries. Washington and Moscow also have an important NPT-related stake, not simply in avoiding the breakdown of bilateral arms control, but in revitalizing that process and demonstrating movement toward further implementation of the NPT's nuclear disarmament goal. Failure to do so will only add credibility to those non-nuclear-weapon state activists (and their civil society partners) that argue for going outside the NPT framework. Focusing on both the narrower logic of strategic self-interest and on the broader political-military relationship, multiple approaches should be pursued in an attempt to gain Russian agreement to sustain and then revitalize the bilateral arms control process.

Making the Case for Russian Reengagement in Bilateral Arms Control

Turning first to that narrower strategic logic, U.S. readiness to work cooperatively with Russia to ensure a stable bilateral strategic relationship that addresses both countries' security concerns and interests. Subject to Russian reciprocity, all issues should be put on the table. For Russia, all issues would mean offenses, defenses, prompt conventional strike, and the conventional balance of forces in Europe; for the United States, it also would need to include Russia's reassessment of the usability of nuclear weapons.

A measured but persistent U.S. response to Russian violations of the INF Treaty also would be part of such an effort to shape Russian thinking. This response would challenge Russian claims that it is in full compliance with the INF Treaty, even while responding to Russian counter-charges of U.S. violations. U.S. officials also should continue to make the case that Russian INF violations, let alone actual withdrawal from the INF Treaty, would trigger U.S. and NATO responses that would adversely impact Russia's own perceived security needs and, in some cases, become self-fulfilling prophecies. Some examples that could be highlighted include reconfiguring regional missile and air defense capabilities to counter a new Russian INF missile threat, more permanent U.S. and NATO air- and ground-force deployments on Russia's borders, and preparations for rapid deployment of U.S. nuclear weapons to the east.

In turn, it should be stressed at multiple levels that given Russia's own narrowly defined security interests, Moscow would be left considerably worse off by the breakdown of the five decades-long bilateral arms control process. That breakdown would result in fewer Russian windows into American strategic thinking and capabilities, greatly reduced influence over U.S. strategic decisions, and no

negotiated constraints on future U.S. strategic programs. Moreover, to the extent that Putin's Russia seeks recognition as a great power equal to the United States, walking away from the arms control process would give up Russia's most obvious claim to such equality. This message will take on greater and greater weight, moreover, as the Russian leadership confronts the potential end of the New START Treaty in 2021, but it bears making at the very start of the new administration in 2017.

None of the preceding arguments about Russia's strategic self-interest, however, address today's more fundamental political-military relationship between the United States, the West, and Russia. The preceding arguments all focus on the narrower logic of why reengaging in a bilateral arms control process would serve Moscow's own interests. During the Cold War, this logic sufficed to produce some arms control progress, and it could do so again. Today's political-military confrontation between Washington and Moscow, however, will remain at best a continuing impediment to a revitalized arms control process, and at worst could lead to a complete breakdown of bilateral arms control.

There is no clear and assured-of-success path back from today's East–West political confrontation.[49] Domestic politics in both countries is also an impediment to change. Nonetheless, one possible starting point would be to take comments by Prime Minister Medvedev and other Russian senior officials at face value and to affirm both countries' shared interest in reversing the slide into a new type of Cold War. That interest would need to guide more specific U.S. policies that would blend and balance three elements, all related to engendering restraint and ultimately cooperation. These three elements are: reducing the attractiveness of Russian political adventurism, reducing Russia's internalized post-Cold War sense of betrayal and insecurity, and renewing a process of building habits of cooperation among two great powers.

To elaborate briefly, ongoing efforts to revitalize NATO's deterrence posture (including its nuclear dimension), as already argued, are central to countering potential Russian adventurism. However, these deterrence enhancements need to be tempered by a readiness to avoid political and military measures that would unnecessarily exacerbate confrontation. Still other actions would aim to reduce domestic instabilities in both the Baltic States and elsewhere on Russia's borders that could provide opportunities or enticements for Russian intervention. Convincing Putin's Russia that Reagan and Gorbachev were right and that a nuclear war cannot be won and must not be fought is especially essential, and warrants separate discussion below.

As for Russia's sense of betrayal and insecurity, NATO expansion to Russia's borders remains key. Past expansion is not going to be

reversed or diluted in terms of NATO's Article V commitment to those new members.[50] However, given that further NATO expansion beyond Montenegro is increasingly politically unlikely, the new administration should make a clear commitment to that effect. In that context, a renewed diplomatic effort is needed, involving Ukraine, Russia, the United States, and the European countries to resolve the conflict in eastern Ukraine. In parallel, a gradual lifting of Western economic sanctions on Russia, as well as other economic engagement of benefit to Russia's troubled economy, is also necessary. On the very specific question of Russian annexation of Crimea, the five decade-long U.S. refusal to recognize politically Soviet annexation of Estonia, Latvia, and Lithuania, even while dealing otherwise with the Soviet Union, may offer the best way out. Continuing efforts are warranted, as well, to revive the NATO–Russia Council as well as to use the Organization for Security and Cooperation in Europe (OSCE) to seek mutually agreed security rules of the road. Among the latter could be a formulation that would offer assurances against Western pursuit of a "color revolution" in Russia and Russian reaffirmation of the 1975 Helsinki Final Act. A new administration's restraint in the use of military power in regional conflicts also could help counter Putin's own assessment of a U.S. military threat to Russia.[51] More narrowly, U.S. readiness, as suggested above, to put all arms control issues (including missile defenses) on the table would also fit in here.

Rebuilding habits of cooperation with Moscow—and in so doing acknowledging the great power status that Russia desires—also has a role to play in reversing the slide to Cold War-like confrontation. The most obvious place to emphasize would be both countries' historic and continuing shared interest in non-proliferation.[52] Already existing contacts within the P5 process could be strengthened by easing the restrictions on U.S.–Russian military-to-military contacts to allow proposed exchanges on nuclear doctrine. Both substantively and as a broader political signal, the new administration should propose that Washington and Moscow resume high-level, bi-annual meetings on the full agenda of non-proliferation issues, from dealing with proliferation problem countries to initial preparations for the 2020 NPT Review Conference.[53] There are still other opportunities to rebuild habits of cooperation between great powers by working shared challenges—challenges that chiefly include terrorism, nuclear security, conflict beyond Europe, and preventing a next use of a nuclear weapon.

In different ways, third-party actions could reinforce efforts to gain Russian agreement to revitalize the bilateral arms control process. Uncertainty about the ultimate end point of Chinese nuclear

modernization overhangs Russian and to a lesser extent U.S. readiness to negotiate additional nuclear reductions. Convincing Chinese officials to find a credible way to formalize their periodic semi-official statements that China "does not seek parity with the United States and Russia" would help to reduce that uncertainty.[54] Very differently, in the wake of the planned 2018 United Nations Summit on Nuclear Disarmament or even sooner, it would be no surprise for a group of NPT non-nuclear weapon states to announce the start of negotiations on a nuclear weapons ban. Their action would heighten the importance for both Washington and Moscow of resumed bilateral arms control progress prior to the 2020 NPT Review Conference.

Perhaps most dramatically, within the next several years, North Korea will likely acquire and demonstrate its possession of a nuclear-armed missile capable of striking targets in the United States. The impact on U.S. assessments of required military capabilities and deployments could easily mirror that which followed Soviet launching of Sputnik. There will likely be great public and congressional pressures—amplified by the American 24-hour media cycle—to take whatever unilateral actions are deemed necessary to protect the United States and its allies from this new threat, regardless of the spillovers for strategic relationships with Russia and China. Russian interlocutors should be told that a revitalized arms control process is the best approach to avoid truly unfettered U.S. unilateralism and to limit the potential spillovers for Russia. The message should also be that Moscow should not underestimate this potential galvanizing impact on American political opinion and on the ability of the U.S. political system to respond dramatically to what very likely will be seen as a game-changing threat.

A Revitalized Bilateral Arms Control Process—Some Possible Elements

In conjunction with making these arguments for Russian reengagement in the bilateral arms control process, the new administration should set out its ideas for a revitalized process of bilateral U.S.–Russia arms control. A number of different but related pathways would fit with the proposed look-long, throw-short nuclear disarmament strategy.

Perhaps most ambitiously, the new administration should propose that the United States and Russia begin a *zero-based assessment of a comprehensive approach to bilateral strategic arms control after New START.* The Obama administration's proposal of additional incremental reductions of strategic nuclear forces would be set aside, and the question of whether or not to extend the New START Treaty for five

more years in 2021 would be deferred.[55] Instead, this joint assessment would return to fundamentals, first by revisiting both sides' strategic concerns and uncertainties and then by comprehensively exploring the potential contributions of bilateral arms control initiatives to address these mutual concerns. All issues and options would be on the table for discussion: offenses and defenses; well-established and potential new capabilities; deployed, reserve, and eliminated systems; the use of formal treaty agreements, reciprocal and parallel actions, and agreed unilateral steps; limits and restraints as well as reassurance measures and cooperative programs; transparency and more formal verification arrangements; and domestic political constraints in both countries.

At best, this zero-based assessment would be carried out officially, in a manner reminiscent of initial efforts in the late 1960s by the United States and the then-Soviet Union to come to grips with what role arms control could play in regulating their strategic relationship. But it would be worth doing even if only semi-officially, perhaps by a joint group of U.S. and Russian "gray beards" or by using a hybrid model of official participation in an assessment organized and run by a non-governmental entity, as in the case of the International Partnership for Nuclear Disarmament Verification being run by the Nuclear Threat Initiative Organization.

The ultimate goal of this zero-based assessment would be new negotiations on a package of agreements and understandings to make up a comprehensive post-New START bilateral arms control regime. The specific package to be negotiated would depend on the zero-based assessment as well as broader political-strategic considerations. To illustrate the concept, however, consider one comprehensive package, dealing with the four most troublesome areas of U.S.–Russia strategic interaction: treaty-based incremental reductions and monitored dismantlement of nuclear warheads; a mix of less formal but negotiated and agreed upon reciprocal and unilateral limits on missile defenses, coupled with transparency and reassurance measures and institutionalized cooperative engagement in this area; transparency and reassurance measures for any future deployments of prompt global strike offensive missile-based systems; and, to be discussed below, all in the context of a credible, transparency-based mutual reaffirmation of the Reagan-Gorbachev injunction that a nuclear war cannot be won and must not be fought.

A joint stock-taking of *strategic reassurance, predictability, and transparency measures* to reduce each other's concerns and strengthen strategic stability would be a somewhat less ambitious proposal. This idea is an old one, dating back to long-ago 1958 "Surprise Attack

Conference" as well as to the 1971 "Accidents Measures" and the 1972 "Incidents at Sea" agreements.[56] The Bush and then the Obama administrations both unsuccessfully put forward proposals to reduce Russian concerns regarding U.S. and NATO deployments of missile defenses[57] as well as U.S. conventional strike capabilities. Semi-official as well as expert dialogues and studies have also taken place.[58] This joint stock-taking would focus on each country's views of the contributions and limitations of proposals already on the table and would also seek to identify and explore still other possible measures. The goal would be to identify and implement one or more specific measures as pilot projects. Past experience suggests that promising areas could include joint technical experiments (e.g., to provide Moscow with insights into actual rather than assumed missile defense technology parameters); notifications of plans, programs, and deployments (e.g., focused, on the one hand, on U.S. conventional strike capabilities perceived as a threat to Russia's nuclear deterrent and on the other, on Russian dual-capable missiles perceived as a threat to NATO); and military-to-military exchanges (e.g., focused on the role of nuclear weapons in their respective military doctrines).

As part of this area, the new administration should put forward the idea that building on the earlier "Accidents Measures" and "Incidents at Sea" agreements, Washington and Moscow explore a new U.S.–Russia "Strategic Code of Conduct." It, too, would begin from each side's strategic concerns and all strategic areas would again be included. A new "Strategic Code of Conduct" would include both overarching principles to govern decisions about offensive and defensive capabilities, as well as more specific undertakings related to dialogue, doctrine, deployments, operational posture, and near- and longer-term risk reduction. As with the two preceding agreements, particular attention would be placed on potentially provocative or dangerous activities and ways that the two countries could lessen those dangers by unilateral or cooperative actions. Even if it proved too difficult to reach agreement on such a code, the discussions themselves would be valuable to help reduce the risk of future missteps.

Least ambitiously, there could now be an opportunity to resume *bilateral cooperative work on the verification of future strategic arms control agreements.* There is a substantial body of prior U.S.–Russian conceptual and technical work related to monitoring nuclear warheads. This work dates from the 1990s and early 2000s and was carried out both bilaterally and in cooperation with the IAEA.[59] Building on that prior work, as well as on the decades-long experience with on-site inspections, U.S. and Russian technical experts could carry out a joint assessment of lessons

learned. Experts could also develop a roadmap for the development of necessary verification and transparency concepts, technologies, and approaches to meet requirements for the possible next phases of strategic arms control. Doing this conceptual and technical work would facilitate later negotiations when the time is ripe. Moscow's readiness to participate in the International Partnership for Nuclear Disarmament Verification suggests, moreover, that it may be ready to reengage in this area.

The reemergence of a partner in Moscow to pursue any one of these ideas for revitalizing the bilateral arms control process (as well as others) will most probably not happen all at once and, although less likely, perhaps not at all. Nonetheless, as argued, there are compelling Russian interests to reengage. Those interests are likely to grow stronger as Russian officials and military come closer to the 2021 deadline to extend, replace, or allow New START to expire, particularly if a North Korean nuclear missile capable of threatening the American homeland is a U.S. domestic game-changer. Movement back from today's slide toward a new Cold War confrontation would be an important enabler, particularly of more far-reaching initiatives along the look-long glide path.

Although focused so far on Moscow's readiness to revitalize a bilateral arms control process, there are also U.S. constraints that would have to be overcome. The limits on U.S. engagement arising out of Russian actions in Crimea and Ukraine have already been mentioned. In addition, within Congress, some members and their staffs have long been skeptical of arms control, writ large and specifically with Russia. There has also been a loss of institutional experience and knowledge in Congress of nuclear matters overall and of arms control in particular. Gaining congressional support will mean making the case as to why renewed arms control engagement between Washington and Moscow would serve U.S. interests, drawing on much of the strategic logic already set out above.

Finally, the coming into office of a new U.S. President in January 2017 is a wild card. For both Washington and Moscow, it will provide an opportunity to reengage politically and on arms control. That said, it bears reemphasizing that even if President Putin chooses not to reengage, setting out this arms control agenda with Moscow will still have broader political payoffs for the new administration, from sustaining nuclear modernization to strengthening U.S. NPT diplomacy.

Revitalizing a U.S. and Russian Belief that "A Nuclear War Cannot be Won and Must Not be Fought"

Convincing the Putin leadership that Reagan and Gorbachev got it right—that a nuclear war cannot be won and must not be fought—is essential both to lessening today's nuclear dangers and to building

toward a 2045 world in which nuclear weapons have been strategically eliminated. Here, the cornerstone needs to be sustained support for NATO and U.S. actions to disabuse the Putin leadership and the Russian military of the idea that the threat or use of nuclear weapons is a path to success in a crisis or even a European conflict. At the same time, both NATO and the United States should explicitly state that the goal of NATO and the United States in any such crisis or conflict is to sustain or restore the status quo, even if that declaration would likely be heavily discounted in Moscow. Otherwise, fears of a possible NATO–U.S. goal of fostering regime change in Russia would reinforce the "escalate to de-escalate" doctrine; in an actual conflict, such fears would heighten Moscow's incentives to use nuclear weapons.

The new U.S. President should also personally make clear to President Putin, quietly but explicitly, that continual nuclear saber-rattling will dramatically backfire at the expense of Russia's and Putin's interests.[60] One way to do so would be to tell President Putin that if he and the Moscow leadership fear an American attempt to neutralize Russia's nuclear deterrent by a mixture of missile defense and conventional strike, creating fears that Russia believes nuclear weapons are usable is the best way to convince the United States to pursue that outcome. Damage limitation would become the course of prudence. Similarly, the message should be that if President Putin and his leadership truly fear an American-inspired "color revolution," there is no better way to create a U.S. incentive to pursue that outcome than to create the belief that regime change in Moscow is the only way to protect the American people from nuclear war.

Finally, opportunities should be identified and pursued to remind today's Russian military planners, defense officials, and leaders of the grave risks and uncertainties inherent in any U.S.–Russian nuclear crisis, even short of actual use of nuclear weapons. One way to do so would be to bring together personnel from the Russian and U.S. ministries of defense and military commands jointly to review the two most serious U.S.–Soviet nuclear crises, the Cuban Missile Crisis of 1962 and the Able Archer crisis of 1983, and what could have happened had restraint not prevailed. There are other possibilities to encourage the Russian military and leadership to focus on the myriad ways military plans can go wrong.

Deepen and Extend a Process of U.S.–China Strategic Dialogue, Reassurance, and Restraint

After more than a decade of dialogue in official forums, and even more so in semi-official forums, U.S. and Chinese officials and experts

have a very good understanding of each other's strategic concerns, uncertainties, and suspicions. Many proposed measures for mutual strategic reassurance and restraint have been put forward by U.S. experts and former senior officials in semi-official dialogues. Chinese officials and experts have listened carefully. Sometimes, they have proposed their own reassurance measures, although these have been focused almost exclusively on how the United States can reassure China. However, agreement on specific initiatives has been elusive.[61] Despite growing frustration among many American officials and experts, the new administration should not give up on the goal of moving toward a process of mutual reassurance and restraint.

The Logic of U.S.–China Mutual Strategic Restraint

Continuation of official and semi-official strategic dialogue—with strategic defined to encompass offenses and defenses, cyber, and space activities—should remain the baseline of these renewed U.S. efforts. One purpose should be to highlight the many reasons why both countries' interests would be better served by putting in place a robust process of mutual reassurance and restraint to address each other's concerns, uncertainties, and suspicions. Specifically, doing so would: allow both countries to concentrate necessary resources on domestic challenges rather than costly strategic competition; lessen the risk of strategic miscalculation in a future U.S.–China regional crisis; contribute to building habits of cooperation to deal with shared regional and global challenges; and as explored further below, help to manage potential spillovers for the U.S.–China strategic relationship of U.S. responses to an increasingly capable and erratic nuclear-armed North Korea.

Regardless of these arguments, gaining Chinese buy-in to a process of mutual reassurance and restraint will need to overcome Chinese suspicions that such a process is a strategic trap to constrain China's growing capabilities and preserve U.S. strategic advantages. The most promising U.S. approach to this challenge is to combine a high-level acceptance of China's emerging posture (e.g., a more robust nuclear deterrent posture vis-à-vis the United States) and a demonstration of how mutual restraint (if not necessarily directly reciprocal restraint) can help China address its strategic problems (e.g., constraints on U.S. missile defenses and conventional prompt global strike capabilities).

More broadly, compared to that between Washington and Moscow, the political relationship between Washington and Beijing is considerably less of an obstacle to putting in place such a process. The competitive aspects of the relationship are still balanced by strong and

shared economic and political interests, both regionally and globally. The ongoing dialogue and periodic summits provide opportunities to reaffirm the U.S. commitment to the goal of long-term political, economic, and military cooperation with China. In parallel, it will remain important to state yet again that the United States accepts a growing regional and global role for China, does not aim to contain China, and that there is no intention to seek a "color revolution" that would overturn the Communist Party regime; all of these being underlying political concerns in Beijing.[62]

Even while signaling U.S. readiness to engage cooperatively, the new administration will also need to remind that building a cooperative U.S.–China political and strategic relationship is not a solely a U.S. responsibility and that reassurance is not a one-way street. China's actions are as consequential as those of the United States. In particular, the U.S. message needs to be that absent Chinese cooperative engagement, the United States will take whatever unilateral actions necessary to lessen U.S. concerns and manage its uncertainties about China.

What are the prospects for gaining Chinese agreement to engage? As with Moscow, a coming North Korean nuclear-missile threat to the American homeland could paradoxically tip the balance in Chinese thinking about engagement. As already proposed, that threat will likely have a game-changing impact on U.S. policy and posture. Moreover, many of the responses that would likely be considered to protect the American homeland from the North Korean nuclear missile threat would potentially spill back to impact the U.S.–China military and strategic relationship. Deployment by the United States and its allies of more robust regional and homeland defenses; regional and global conventional prompt missile-based strike capabilities; enhanced anti-submarine warfare (ASW) capabilities (assuming a North Korean submarine-launched nuclear missile capability); and more robust in-theater intelligence, reconnaissance, and strike capabilities would be the most obvious possibilities. Pursued unilaterally with minimum concern for China's concerns, U.S. responses would almost certainly trigger China's own unilateral actions. The all-too-likely result would be an accelerating action-reaction military competition. By contrast, a process of U.S.–China mutual strategic reassurance and restraint would offer a pathway for Beijing to influence U.S. decisions (and the converse), thereby containing adverse spillovers for China's strategic posture and lessening action-reaction competition. If this logic gains traction in Beijing, much as the actions of the Kim Jong-Un regime already appear to have led China's leadership to support a tougher international posture toward

North Korea,[63] there could be a new readiness by China's leadership to explore how a process of mutual strategic reassurance and restraint could serve both countries' strategic interests.

Finally, U.S. efforts in the 1980s and into the 1990s to convince the Chinese regime to change its nuclear non-proliferation posture (from at least rhetorical support for more widespread proliferation to becoming a strong supporter of the global non-proliferation regime) show that change is possible if China's interests would be served. In that case, those interests included successful negotiation of an agreement for peaceful nuclear cooperation with the United States as part of strengthening political ties to the United States and global economic engagement. These earlier U.S. efforts also make it clear that such momentous Chinese policy shifts take time.[64]

A Process of Mutual U.S.–China Strategic Reassurance and Restraint

Assuming Chinese readiness to engage, a first step would be a joint assessment of *U.S.–China mutual reassurance measures.* Particularly in semi-official dialogue and expert writings, many possible baskets of measures have been put on the table, including: increased exchanges between each country's militaries, defense officials, and technical experts; joint studies and analyses, table-top exercises, and assessments; unilateral monitoring of certain types of U.S. technology testing; technical exchanges and joint technology development; and mutual declarations related to planned and future programs and capabilities. Rather than focusing only on isolated measures, however, it would be preferable to think in terms of reassurance packages, each linked to previously identified concerns and uncertainties. The possibility should also be left open that some reassurance packages (or components thereof) might entail greater action on the part of one or the other country, allowing for asymmetry in implementation within the context of a basic bargain on mutual reassurance. Three examples illustrate this approach, the first case focused on a Chinese concern, the second on a U.S. concern, and a third case on a shared concern.

A first package of reassurance measures would aim to address Chinese concerns about a threat from U.S. missile defenses and conventional strike capabilities to China's limited nuclear deterrent. Annual data exchanges from the United States to China on U.S. programs, plans, and anticipated future deployments would be a foundation. (If reciprocity were sought, China could provide comparable data exchanges on its missile defense research and development [R&D] activities.) Based on these exchanges, a series of Chinese technical observations of U.S. missile defense tests could be designed to provide data on the actual rather than Chinese-

assumed or feared technical parameters of key system elements, e.g., of missile defense interceptor burn-out velocity. Confidence-building visits or other measures could be crafted to confirm limits on future conventional prompt strike missile capabilities. The U.S. reaffirmation of no new nuclear weapon capabilities also would fit in here.

Lessening U.S. uncertainties about China's nuclear modernization and possible changes of Chinese nuclear doctrine would be the focus of a second package of measures. Without crossing Beijing's "red line" of not providing information on nuclear stockpile size and deployments, China still could explain the logic and decision-making process that inform decisions in both areas. In turn, as also proposed above, China could officially confirm its unofficial statements that China does not seek parity with the United States and Russia and, going a step further, could pledge that it will not "build up" to equal numbers as Washington and Moscow "build down." China could also declare an upper limit on its plans for future MIRV capabilities. Although more controversial on the American side, officials, military, and experts from both countries could begin discussions—not negotiations—on the logic, elements, and potential benefits and risks of a mutual U.S.–China no-first-use of nuclear weapons agreement. The very process of such discussions would provide insights into both countries' nuclear thinking, decision-making, and postures, even if an agreement was not later negotiated.

The third focus would be both countries' concerns about conventional attacks by the other against its own key strategic assets. For the United States, those concerns are linked to possible Chinese attacks with ground-based, space-based, or cyber assets on U.S. space-based and other systems that support the American strategic nuclear deterrent; for China, those concerns are linked to a focus on U.S. conventional cruise missile or prompt global strike attacks on Chinese nuclear forces. A formal pledge of "no conventional attacks on nuclear systems and supporting infrastructure" could be the starting point toward a package of reassurance and predictability measures. Data exchanges on U.S. conventional strike plans, programs, and capabilities could be added in response to Chinese concerns about a threat from U.S. prompt global strike capabilities, perhaps combined with information exchanges on Chinese R&D in this area.

These illustrative packages are not intended to be definitive. None of them should be ruled out a priori as too impractical. What they are intended to demonstrate is that opportunities exist for the United States and China to begin a more substantive conversation on a process of mutual reassurance. Once begun, the initial objective would be the agreement on and implementation of "pilot projects" in this area. Those

projects would allow both countries to test and refine the concept of mutual reassurance packages, take initial steps, and then as the process proved its utility over time, define and pursue additional steps.

As part of the proposed redefined nuclear disarmament agenda, U.S.–China mutual reassurance should be seen as a stepping stone to a more comprehensive *process of mutual strategic restraint* between the two countries. For reasons set out above, that broader process would serve both countries' political, security, and economic interests, including their mutually professed interest in building a more cooperative overall relationship. Moreover, a process of parallel unilateral strategic restraint already exists between the two countries, although it is not officially acknowledged or recognized as such. At least so far, China has restrained the pace, scope, and purpose of its development and deployment of nuclear weapons; the United States has restrained the pace, scope, and purpose of its development of homeland missile defenses as well as repeatedly stated that any future development of long-range prompt global strike capabilities also would be limited. Unilateral restraint, however, is not fully credible to either Washington or Beijing.

A process of U.S.–China mutual strategic restraint, as envisaged here, would not be the type of formal treaty-based arms control that exists between the United States and Russia or that is reflected in multilateral disarmament treaties. Instead, it would rely on a less formal, non-treaty-based approach. At its core would be negotiated understandings on specific restraints, limits, and rules of the road for those military programs and activities seen as most threatening by the other country. Those restraints and limits could apply asymmetrically to different programs in the two countries. For instance, U.S. restraints on deployments of missile defenses could be paralleled by Chinese restraints to the modernization of its nuclear forces. These restraints then would be reflected in parallel political commitments made at the Presidential levels in both countries. Accompanying reassurance measures would be tailored to provide confidence in implementation. Initially, mutual strategic restraint could be focused, as above, on U.S.–China offense-defense uncertainties; over time it could be applied to other strategic areas, including space and cyber.[65]

It is most probably premature to expect that China's leadership would endorse a proposal to officially explore the idea of mutual strategic restraint. However, it would not be premature for the new administration to propose that at least at the semi-official level, a group of officials and experts look closely at the dimensions of mutual strategic restraint, its potential payoffs for the two countries, and possible next steps to advance such a process. This group could then

report their results back into the ongoing official strategic dialogue and thereby help both countries to do the homework needed to launch such a process when Washington and Beijing decide that doing so would serve their security and political interests.

Deepen and Extend the P5 Process—Adding a Focus on Nuclear Risk Reduction and Nuclear Disarmament Building Blocks

Since 2009, senior officials and experts from the five NPT nuclear-weapon states have met both annually and in inter-sessional discussions in what is now known as the P5 Process. Although differences persist among these states on the scope and substance of the process—and in degrees of support—it will almost certainly continue. For the most part, it has been used by the P5 countries to strengthen their NPT diplomacy, linking to the NPT Review process. While continuing this NPT focus, the P5 work program should be modified to focus more explicitly on reducing nuclear dangers and on the building blocks of nuclear disarmament. Doing so would significantly increase those NPT-related payoffs.

Already, the P5 countries are apparently exploring possible future discussions of nuclear doctrine. If implemented, these discussions would help each of the countries better understand how the others think about the roles, utility, necessity, and usability of nuclear weapons. Agreement on concepts and terms need not be the goal; rather, the benefit would be that windows into each other's thinking would facilitate later actions. For that reason, discussions of doctrine would be a first step toward harmonizing concepts of strategic stability.

Very differently, the interests of each of the P5 countries would be indirectly, and in some situations even directly, impacted by any use of a nuclear weapon. They also have a special responsibility as NPT nuclear-weapon states to reduce the risk of a future use of nuclear weapons. Greater P5 cooperation in this area would also respond directly to the concerns raised in the humanitarian impact movement. For all these reasons, one especially important expanded focus for the P5 Process should be to assess how a next use of nuclear weapons might come about (whether by accident, miscalculation, or intention), by a state or a non-state entity, and how the P5 countries could cooperate to prevent any next use. In the context of an overall exploration of pathways to a future use of nuclear weapons, two more specific areas for cooperation could be preventing or interdicting an attempted terrorist nuclear attack and lessening the risk that an escalating crisis in South Asia could lead to a nuclear detonation.

Exchanges on the concept, principles, and elements of a "Strategic Code of Conduct" would be another way in which the P5 Process could be expanded to play a nuclear disarmament building block role. As with a U.S.–Russia "Strategic Code of Conduct," many topics could be included, from principles and practices for strategic stability to best practices for nuclear safety and security. Here too, at least initially, the payoff would appear in terms of providing windows into each other's thinking. Later agreement, first on principles and then possibly on a code itself, would help to lessen nuclear dangers and would support stable nuclear policies, postures, and activities.

Engagement with the non-NPT-declared nuclear-weapon states, India and Pakistan, would be another possible focus. One purpose would be to encourage nuclear restraint, both in peacetime and in a conflict. Within the constraints imposed by their Article I NPT obligation "not to assist" the acquisition of nuclear weapons, P5 engagement also could include discussions of dangerous missteps and wrong turns from their own experience that Delhi and Islamabad should avoid.

All of the P5 countries are now participating in the International Partnership for Nuclear Disarmament Verification (IPNDV). In parallel with that participation and reflecting again their status as nuclear-weapon states, these existing discussions could become the basis for one or more joint verification and transparency experiments by the P5 together. A P5 experiment would also build on now-suspended cooperation on nuclear disarmament verification between Russia and the United States, ongoing cooperation between the United States and the United Kingdom, and repeated semi-official expressions of a Chinese interest in such cooperation.

Neither the new administration nor its P5 partners can be expected to initially agree to all of these possible elements. In any case, they likely lack sufficient resources and personnel to begin all of them at once. Nonetheless, given the potential payoffs, the new administration should propose that the P5 countries expand the P5 Process work program, perhaps including a new focus on P5 cooperation to reduce the risk of use of nuclear weapons.

Going Beyond Multilateral Nuclear Disarmament Stalemate

Confronting today's multilateral disarmament stalemate, the new administration will need to decide *whether to continue to pursue a new international agreement regulating fissile material for nuclear weapons, and more importantly with what scope and in what negotiating forum.* Today's official U.S. position favors the negotiation of a narrowly

defined treaty cutting off production of fissile material for nuclear weapons—a so-called fissile material cutoff treaty (FMCT). Because most NPT non-nuclear-weapon states want existing stocks of previously produced nuclear-weapons materials included in the scope of any fissile material treaty, the Obama administration has acknowledged that other countries can raise whatever issues they wish once negotiations begin. So far, this approach has proved unsuccessful because of the refusal of Pakistan (with China in the background) to begin treaty negotiations at the Conference on Disarmament (CD). Negotiation of fissile material limits has remained only a U.S. talking point in defending the step-by-step approach to nuclear disarmament—and one of less and less utility for NPT diplomacy given widely shared skepticism among most non-nuclear-weapon states about the narrow scope.

A More Ambitious Approach to Fissile Material Limits

Faced with this continuing stalemate, *a more ambitious approach to the scope of a fissile material treaty is warranted, one that would view such a treaty as part of the wider nuclear-disarmament confidence, transparency, and verification building process.* Specifically, the new administration should propose that a fissile material treaty include declarations and other transparency measures for past production and existing stocks—with the specifics to be negotiated. Possibilities could include declarations of all past and present nuclear-weapon material production, utilization, and storage sites; of flows of fissile material for still-permitted military uses of such materials, e.g., in naval nuclear propulsion programs; of disposition and storage of nuclear-weapon-usable material derived from dismantled nuclear warheads; of flows of nuclear-weapon-usable fissile material no longer required for military purposes placed under international monitoring; and, the most controversially, of best estimates of past production as well as existing stockpiles of nuclear-weapons materials.

With this broader transparency focus, a new treaty would provide ground truth needed for advancing the look-long nuclear disarmament vision. Given that linkage, it would be welcomed by many NPT non-nuclear-weapon states and have greater NPT payoffs. Even so, more activist non-nuclear-weapon states would likely press for negotiated reductions of existing stocks as part of a fissile material treaty.

Efforts to use negotiation of a fissile material treaty to pursue greater nuclear transparency would be very consistent with the historic U.S. commitment to nuclear transparency, including declarations of past U.S. production of highly enriched uranium and plutonium as well as the declassification of the size of the U.S. nuclear stockpile.

Depending on what transparency measures were ultimately negotiated, there would also be partial precedents in the transparency arrangements of the U.S.–Russian HEU Purchase Agreement, in recent declarations by both France and the United Kingdom of the upper levels of their nuclear weapon stockpiles, and in France's transparency of dismantled nuclear materials production facilities. At least for these P5 countries, the greatest obstacle to their agreement to include transparency measures covering past production of fissile material for nuclear weapons could well be the difficulties of coming up with accurate estimates from historical data. For China, its traditional allergy to transparency, as well as its underlying reluctance to negotiate fissile material limits apparently as long as its strategic relationship with the United States remains uncertain, would be its greatest impediment.

In turn, if by the time the new administration takes office the Conference on Disarmament (CD) remains stalemated, it will no longer be possible to avoid the conclusion that the CD is a dead end and that a different negotiating mechanism is needed. The P5 countries could negotiate a fissile material treaty among themselves. At least some P5 countries, however, are likely to oppose P5-only negotiations on the grounds that it would divert P5 energies and that those negotiations would not limit production by Pakistan and India. P5 negotiations would also not have the benefits of undertaking a treaty in which all states participate, whether in terms of wider buy-in, NPT legitimacy, or absorbing the energies of the multilateral disarmament community. A very different approach would be for the new administration (building on prior diplomatic consultations) to call a meeting of like-minded countries, both nuclear and non-nuclear-weapon states, to begin negotiations on a Fissile Material Treaty. Some, but not necessarily all, of the P5 countries could be expected to participate. Wider multilateral participation would add to the legitimacy of an eventual treaty, although this would come at the expense of a more complex negotiating process.

Neither of these two paths forward would include participation by India and Pakistan—the P5 path by definition, the like-minded path by the great likelihood that both countries would not participate. However, although placing limits on both countries' programs is most often seen as a key objective of an FMCT, there is virtually no prospect in the current context that Pakistan and India would agree to stop production of nuclear-weapons material. For that reason, their lack of participation should not be a reason not to proceed otherwise. Moreover, there is a better way to think about the negotiation of a fissile material treaty with regard to these two countries: not as a means to

limit their production of nuclear-weapon materials now but as a treaty that India and Pakistan, after a future nuclear shock, could sign jointly as a means to signal a mutual commitment to nuclear restraint. There is a partial precedent: after the shock of the Cuban Missile Crisis, both the United States and the Soviet Union negotiated the Limited Test Ban Treaty as a political signal of such mutual nuclear restraint. After an equally eye-opening regional nuclear crisis, adherence to an already-on-the shelf fissile material treaty could serve a comparable purpose for Islamabad and New Delhi.

Moving for CTBT Ratification

The new administration will also need to decide *whether or not to continue the U.S. moratorium on the testing of nuclear weapons and, more importantly, whether to seek ratification of the CTBT.* Lack of political support for resumed nuclear testing, as well as the adverse impact of a fierce congressional debate over resumed testing on sustaining necessary nuclear modernization, provides ample reasons for continuing the moratorium.

On CTBT ratification, as long as the treaty remains unratified and even if it has not yet entered into force, the United States will continue to experience the worst of two worlds. For domestic and alliance-related political reasons, it is virtually impossible to envisage a resumption of U.S. nuclear testing absent the discovery of some very dramatic technical problem with one of the warheads in the U.S. nuclear stockpile. Nearly two decades of successful reliance on the Stockpile Stewardship Program to monitor existing nuclear weapons reinforces that judgment.[66] Assuming a dramatic technical problem, moreover, the option would exist to withdraw from a CTBT. Additionally, there would likely be very strong security arguments to remedy the problem without revealing its existence by a resumption of nuclear testing. On the other hand, the United States today gains none of the benefits that would follow its own CTBT ratification. These benefits include: a greater likelihood of prompt ratification by China as well as adherence by Iran, Israel, and other important hold-out states; a lessened possibility of withdrawal from the CTBT and resumption of nuclear testing by Russia; a strengthened international norm of "no testing," impacting testing decisions (and advanced weaponization) in Pakistan and India, although not North Korea; and an overall boost for U.S. NPT diplomacy and the legitimacy of the NPT as the 50th anniversary of that treaty approaches in 2020.[67]

Given these considerations, support of the CTBT as well as pursuit of CTBT ratification should remain part of a redefined nuclear

disarmament agenda. The Obama administration's decision to support a new Security Council Resolution endorsing the CTBT and calling on those states (including nuclear-weapon states) that have not done so to sign and ratify the Treaty was one way to show U.S. endorsement.[68] An additional way to affirm CTBT, while also making the case and testing the waters for ratification, would be to seek congressional support and funding for making the CTBTO International Monitoring System (IMS) permanent.[69] Although nearly completed and contributing already to global monitoring, the IMS is running on an interim basis in preparation for the treaty's entry into force. As for seeking ratification, what needs to be avoided is the hasty approach to ratification of the Clinton administration in 1999 or the continuing deferral by the Obama administration of serious efforts to build political support. Rather, any attempt to gain Senate advice and consent for ratification would best be prefaced by a prolonged process of Senate hearings and public arguments to make the case that, on balance, CTBT ratification now would bring more benefits than risks.

Engagement with NPT Non-Nuclear-Weapon States

At a time of growing polarization and competing narratives within the NPT, engagement with NPT non-nuclear-weapon states will remain an essential throw-short initiative. As already argued, the overall objective should be to articulate a U.S. look-long vision of the nuclear disarmament future. In particular, if the strategy set out here is accepted, it will be important to make the case for strategic elimination as the core of that look-long vision. But the new administration should go beyond simply articulating that agenda and its underlying logic. It should also be prepared to engage non-nuclear-weapon states in defining the ways forward to strategic elimination and to seek their involvement in putting the building blocks for its realization into place. Several other more specific engagement challenges can also be expected.

In part, the new administration will need to continue to make the case that go-it-alone negotiation of a nuclear-weapon ban will not advance nuclear disarmament. The nuclear-weapon states will neither participate nor be bound by any outcome—going down the ban path will undercut and not reinforce action by the NPT nuclear-weapon states to implement Article VI. Rather than delegitimizing nuclear weapons, a pursuit of a nuclear-weapon ban treaty is more likely to delegitimize nuclear disarmament in the eyes of the nuclear-weapon states without whom no nuclear disarmament can occur. That said, it is now expected that at its fall 2016 meeting, the United Nations First Committee will pass a resolution calling for the start

of ban negotiations in 2017. Setting out and implementing its own nuclear disarmament agenda offers the best opportunity for the new administration to reduce wider support among non-nuclear-weapon states for carrying forward negotiations of a ban treaty—or adhering to an eventual ban if one is successfully negotiated.

It will also be necessary to respond to the argument by some or perhaps even many nuclear disarmament advocates that a look-long vision of the strategic elimination of nuclear weapons is not ambitious enough. They will rightly argue that such a look-long vision tempers the Prague speech's endorsement of nuclear abolition even though in that speech President Obama stated that, "[t]his goal will not be reached quickly—perhaps not in my lifetime." One response would be to highlight the specific nuclear dangers that have led to today's nuclear disarmament stalemate, the building blocks for sustained progress, and the very dramatic change that would be entailed by successful realization of the strategic elimination of nuclear weapons. Ultimately, the best response would be progress toward the look-long vision—revitalizing the U.S.–Russia nuclear arms control process, beginning a process of U.S.–China mutual reassurance and restraint, and P5 actions to reduce the risk of nuclear use. The goal would not be to win over the most ardent nuclear disarmament activists (including among the NGO community), which is likely impossible; instead, the goal needs to be to convince the wider group of non-nuclear-weapon states of the logic of this redefined nuclear disarmament agenda and of the U.S. commitment to its pursuit.

For most U.S. allies in Europe and Asia, as argued above, a U.S. look-long vision of strategic elimination will very likely help them sustain domestic political support to revitalize nuclear deterrence, as well as to oppose more extreme proposals. In some cases, however, the new administration may need to reassure allies about the impact of a redefined U.S. nuclear disarmament agenda on their security relationship with the United States. Some Japanese officials, for example, could be concerned that a new process of U.S.–China mutual reassurance and restraint would disadvantage Japan. At a more specific level, signals of U.S. readiness to explore a mutual no-conventional-attacks-on-strategic-systems understanding with China, let alone a mutual no-first-use of nuclear weapons agreement, could be resisted by Japanese officials.[70] NATO allies in the Baltics and Poland would almost certainly look very closely at future U.S.–Russian engagement on missile defenses. In dealing with these allies, there will likely be a need to strike difficult balances between taking their concerns seriously and not giving allies a virtual veto over new U.S. initiatives.

Regional Nuclear Threat Reduction—Beyond Europe[71]

Regional nuclear threat reduction outside of Europe will continue to rely most heavily on U.S. defense and deterrence posture, diplomacy and confidence-building, and traditional non-proliferation policies. Its inclusion here in a discussion of a redefined agenda for nuclear disarmament provides a useful reminder that nuclear disarmament measures are only one part of a more comprehensive approach to reduce nuclear dangers. Non-proliferation success and preventing a nuclear next use—both aspects of regional nuclear threat reduction—are important nuclear disarmament building blocks.

Beginning with North Korea, what once was a non-proliferation problem country has increasingly become a major regional and global security threat, with Pyongyang's advancing nuclear and missile programs as well as Kim Jong-Un's repeated threats to use nuclear weapons. In response, the United Nations Security Council—with growing cooperation between the United States and China[72]—has imposed increasingly stringent economic sanctions (including Security Council Resolution 2270 in March 2016). At North Korea's 7th Party Congress in May 2016, Kim Jong-Un highlighted North Korea's nuclear and missile programs. However, the Party Congress also approved a Five-Year Economic Plan that signaled the regime's intention to focus greater resources on economic development even while continuing those programs.[73]

A two-track approach offers the most promise as the new administration crafts its response to North Korea. In cooperation with U.S. partners in the now-suspended Six-Party Talks[74], one track would yet again seek a diplomatic settlement with North Korea. The goal would be a comprehensive and phased agreement whose elements would include a peace treaty, normalized U.S.–DPRK relations, lifting of sanctions and economic engagement, and the denuclearization of North Korea.[75] The prospects for success are uncertain at best. However, the combination of a greater Chinese readiness to put real pressure on Pyongyang, ever-more stringent economic sanctions, a possible new North Korean interest in economic development, and the continuing dangers of not trying, provides sufficient reason to test this approach. The second track would continue to strengthen U.S. and allied deterrence and defense capabilities to protect Japan and South Korea and to assure them, protect U.S. forces and bases, and protect the American homeland in the face of the growing North Korean nuclear threat. In principle, this track should support the negotiations track by significantly reducing the benefits for North Korea of possession of nuclear weapons; in practice, it is also likely to heighten North Korean fears of U.S. intentions.

Elsewhere in northeast Asia, success in checking the erosion of the NPT's credibility and legitimacy would also help to sustain the NPT as a legal, political, technical, and domestic constraint on decisions by either South Korea or Japan to seek national nuclear weapons. However, the most important action by the new administration, to influence proliferation decisions in Seoul and Tokyo, will remain, ensuring the credibility of the U.S. extended nuclear deterrent, pending some more fundamental resolution of political-military threats to both countries. Here, the new administration should sustain and build on the "deterrence dialogues" with both countries put in place under the Obama administration.

Within South Asia, the most immediate regional threat reduction challenge is the prospect of expanding nuclear competition between India and Pakistan, as well as the risk that a terrorist incident could again lead to a military confrontation under the nuclear shadow. Uncertainties also persist about nuclear security in both countries, raising the risk of terrorist access to nuclear-weapons material or even a nuclear weapon. Faced with these dangers, U.S. official and semi-official efforts need to be continued to encourage regional political and military confidence-building and to highlight the risks of expanding nuclear competition, as well as of actual use of nuclear weapons.[76] Within the limits set by the NPT Article I obligation "not to assist," official and semi-official steps can be taken to encourage or support effective nuclear security and control. Should yet another India–Pakistan military crisis erupt, the new administration, like its predecessors, also should be prepared to work with other outside powers to urge restraint while using their good offices to head off escalation.[77]

Turning to the Middle East, effective implementation of the Joint Comprehensive Plan of Action with Iran is and will remain at the core of Middle East nuclear threat reduction. Despite its limitations, the JCPOA provides the best achievable set of current constraints on Iran's potential nuclear-weapon ambitions. There is no reason to believe that a better set of constraints can be attained in the foreseeable future; an attempt to reopen negotiations would almost certainly result in lessened constraints on Iran's nuclear ambitions, if not eliminate said constraints completely. For now, the JCPOA has also contributed to containing proliferation incentives in the region. The priority for the new administration should be ensuring strict Iranian compliance with the JCPOA, while beginning to focus on how to sustain that non-proliferation success over the longer term. As in East Asia, sustaining U.S. defense cooperation with regional allies and friends will remain equally important to that goal.

Ever since the "Resolution on the Middle East" was adopted by consensus as part of the 1995 Indefinite Extension of the NPT, the goal of negotiation of a Middle East zone free of nuclear and other weapons of mass destruction has been a source of disagreement at each of the succeeding five-year NPT Review Conferences. Most recently, at the 2015 Review Conference, the United States (along with the United Kingdom and Canada) blocked consensus adoption of the draft Final Document because of its language on the Middle East Issue.[78] Differences over how to pursue the 1995 goal could easily lead to a similar breakdown at the 2020 NPT Review Conference, resulting for the first time in what virtually all NPT Parties would view as back-to-back Review Conference failures. As a result, the credibility of the NPT would be weakened. Thus, in cooperation with other NPT countries, the new administration should encourage new consultations on this issue among the countries of the region to determine if there is a way forward that is acceptable to both Arab countries and Israel.

Finally, the United States has signed and submitted for Senate ratification the protocols of the nuclear free zone treaties covering Africa, the South Pacific, and Central Asia. Such zones help to reinforce the overall norm of non-proliferation, while complementing and extending the NPT's obligations. In particular, the protocols to these treaties include the obligation of the United States and other nuclear-weapon states not to use or threaten to use nuclear explosive devices against any party to the Treaty. Successfully seeking Senate ratification of these treaties would have few costs for the United States, particularly given the extremely low likelihood that the United States would find itself in a situation in which adherence to the protocols would clash with desired military actions or activities. Among the likely payoffs would be a boost for the NPT, a strengthened norm of nuclear non-use, and enhanced credibility of overall U.S. nuclear non-proliferation and disarmament strategy.

[42] *Nuclear Posture Review Report*, April 2010, p. x.

[43] *Nuclear Posture Review Report*, Ibid., p.viii.

[44] *Nuclear Posture Review Report*, Ibid., p. x.

[45] See "Taking Action on Dealerting at the 2015 Review Conference of the Parties to the Treaty on the Nonproliferation of Nuclear Weapons," the Dealerting Group, NPT/CONF.2015/WP.21.

[46] See Gen. (Ret.) James E. Cartwright and the Global Zero Commission, "De-Alerting and Stabilizing the World's Nuclear Force Postures," April 2015.

[47] U.S. presentations opposing de-alerting emphasize variously the lack of verifiability of de-alerting as well as the potential instabilities that could result should nuclear-weapon states move in a crisis to re-alert their nuclear postures. They point out that the existing U.S. nuclear posture is not one of so-called "hair-trigger alert." See, for example, "U.S. Nuclear Force Posture and De-Alerting," Fact Sheet, Bureau of Arms Control, Verification, and Compliance, December 14, 2015.

[48] Statement at the Munich Security Conference, February 12, 2016.

[49] For perspectives on a path forward, see: Leslie Gelb, "Russia and America: Toward a New Détente," *The National Interest*, July–August 2015; Steven Pifer, "Crisis over Ukraine: Contingency Planning Memorandum Update," Council on Foreign Relations, October 2015.

[50] Article V of North Atlantic Treaty states: "The Parties agree that an armed attack against one or more of them in Europe or North America shall be considered an attack against them all and consequently they agree that, if such an armed attack occurs, each of them, in exercise of the right of individual or collective self-defence recognised by Article 51 of the Charter of the United Nations, will assist the Party or Parties so attacked by taking forthwith, individually and in concert with the other Parties, such action as it deems necessary, including the use of armed force, to restore and maintain the security of the North Atlantic area."

[51] This point was suggested to me by Brad Roberts, who argues that U.S. military intervention in Libya confirmed a Putin view of the United States as only too willing to use military power to pursue its political objectives.

[52] On the importance of great power status to Moscow and ways to acknowledge such status, see, Gelb, op. cit.

[53] For a comparable argument and a sampling of agenda items, see Robert Einhorn "Prospects for U.S.-Russian nonproliferation cooperation," Brookings, February 26, 2016.

[54] These types of statements have been made in Track 1/1 2 meetings and smaller sessions in which the author has been present.

[55] It has been reported that the Obama administration is considering a proposal to Moscow that the United States and Russia agree now to extend the New START limits for five years, as allowed by the Treaty. Should it do so and if Moscow agrees (which is uncertain), the new administration should start from that agreed extension and move forward to propose the type of zero-based assessment being explored here. See Josh Rogin, "Obama plans major nuclear policy changes in his final months," *Washington Post*, July 10, 2016.

[56] Respectively, "Agreement on Measures to Reduce the Risk of Outbreak of Nuclear War Between the United States of America and the Union of Soviet Socialist Republics (Accidents Measures Agreement), September 30," 1971 and "Agreement Between the Government of the United States of America and the Union of Soviet Socialist Republics on the Prevention of Incidents On and Over the High Seas," May 25, 1972.

[57] Literally dozens of proposals and meetings took place involving senior officials. For a listing see, Bradley Roberts, "U.S. Efforts to Promote Cooperation with Russia on Missile Defense in Europe: A Chronological Overview," March 25, 2015, Unpublished paper.

[58] See, for example, James M. Acton, Editor, " Beyond Treaties: Immediate Steps to Reduce Nuclear Dangers," Carnegie Endowment for International Peace, *Policy Outlook*, October 2012; "Ballistic Missile Defense in the Context of Strategic Stability, Statement of Task," Committee on International Security and Arms Control, National Academy of Sciences, March 2015.

[59] For a database that includes examples of this prior work see the International Partnership for Nuclear Disarmament Verification (IPNDV) "Monitoring and Verification Resource Collection" on the IPNDV website at http://www.nti.org/about/projects/international-partnership-nuclear-disarmament-verification/.

[60] For a broader discussion but with some overlapping messages, partly reflecting our prior discussions, see Paul Bernstein, "Making Russia Think Twice about Nuclear Threats," March 9, 2016, http://warontherocks.com/2016/03/making-russia-think-twice-about-nuclear-threats.

[61] For a more detailed and congruent discussion of the themes of this semi-official dialogue, see Roberts, op. cit., pp.152–159.

[62] All of these political messages are worth sending even if China's leadership will remain skeptical of U.S. political intentions. Sending them helps to reinforce the narrower messages about both countries' interests in a process of mutual reassurance and restraint.

[63] See Jonathan D. Pollack, "China and North Korea: The long goodbye?", Brookings Institution, March 28, 2016.

[64] This assessment reflects the author's own personal involvement in those efforts to encourage change.

[65] For some other variants on this concept, see: David C. Gompert and Philip C. Saunders, *The Paradox of Power: Sino-American Strategic Restraint in an Age of Vulnerability*, U.S. National Defense University, 2011; Wu Riqiang, "China's Anxiety about U.S. Missile Defense: A Solution," *Survival*, Oct–Nov. 2013.

[66] On the technical issues related to CTBT ratification, including positive judgments of the Stockpile Stewardship Program and of U.S. technical capabilities to monitor CTBT, see Committee on Reviewing and Updating Technical Issues Related to the Comprehensive Nuclear Test Ban Treaty, "The Comprehensive Nuclear Test Ban Treaty—Technical Issues for the United States," National Research Council of the National Academies, Washington, DC, 2012.

[67] A somewhat comparable argument that, with a proven Stockpile Stewardship Program and right of withdrawal, the costs of ratification of CTBT now are "essentially non-existent," though with greater agnosticism about the putative benefits of ratification, is made by Ambassador Linton Brooks. See Interview with Linton Brooks by Page van der Linden, *Arms Control Wonk*, March 11, 2011. For a broader and still germane discussion, see *CTBT at 15: Status and Prospects,* Washington, D.C.: Arms Control Association, October 2012).

[68] See United Nations Security Council Resolution 2310 (2016), 23 September 2016. Also see Daryl G. Kimball, "*Statement on Challenges on Disarmament and Opportunities for Progress*," Arms Control Association, April 18, 2016, http://www.armscontrol.org; Josh Rogin, "Obama plans major nuclear policy changes in his final months," *Washington Post*, July 10, 2016.

[69] See Michael Krepon, "Securing Valuable Global Services," Arms Control Wonk, September 14, 2011. Krepon has continued to make this argument, including with the author.

[70] During the Obama administration's NPR, the Japanese apparently made clear their opposition to U.S. adoption of a no-first-use or a sole reliance nuclear doctrine.

[71] Nuclear threat reduction in Europe was discussed above, including in terms of revitalizing the Reagan–Gorbachev injunction against use of nuclear weapons.

[72] See Pollack, op. cit.

[73] In my conversations in Beijing with Chinese experts soon after the Party Congress, they highlighted this Five-Year Economic Plan and strongly argued that the Kim Jong-Un regime had decided to pursue economic development. They also saw that North Korean decision as creating an opportunity to seek a political settlement, ultimately including denuclearization. See also, Harry H. Sa, "The Most Overlooked Story from North Korea's Party Congress," *The National Interest*, May 11, 2016.

[74] The other members of the Six-Party Talks were China, Japan, South Korea, and Russia—along with North Korea.

[75] For a discussion of such an approach entailing "simultaneous negotiated phase-by-phase movement toward a peace treaty accompanied by denuclearization" by a person long-involved with this problem, first officially and then as an expert, see Joel S. Wit, "Trapped in No-Man's Land: The Future of US Policy Toward North Korea," June 2016, US-Korea Institute at SAIS. This approach also figured in my discussions with Chinese officials and experts.

[76] Two U.S. experts also have recently explored the possibility of encouraging Pakistani nuclear restraint, or what they call a "normal nuclear Pakistan," in return for measures that would enhance that country's international political and economic standing. See Michael Krepon and Toby Dalton, op. cit.

[77] See Michael Krepon, "Crises in South Asia: Trends and Potential Consequences," in Nate Cohn (eds)., *Crises in South Asia: Trends and Potential Consequences*, Stimson Center, September 2011, especially pp. 20–26 on "US Crisis Management."

[78] Specifically, as the United States pointed, the Final Document's language mandated that by March 2016 the Secretary General of the United Nations call a Conference to begin negotiations on a MENWMDFZ without reference to the agreement among the countries in the region on the agenda and modalities of that Conference. This approach clashed with the long-standing U.S. and international approach that such nuclear-free zones have to reflect the will of the countries of the region.

Develop and Put in Place Transparency, Verification, and Institutional Disarmament Building Blocks

Develop, Test, and Put on the Shelf Nuclear Disarmament Transparency and Verification Concepts and Technologies

By now, the specific substantive areas areas that would likely become the subject of future nuclear disarmament negotiations, and consequently in which there will be future requirements *to develop, test, and put on the shelf needed concepts and technologies for nuclear disarmament transparency and verification,* are well known. Examples include:[78] the cessation of production of fissile materials for nuclear weapons; declarations and monitoring of existing stocks of nuclear-weapon usable materials; further reductions of the numbers of deployed nuclear weapons, with warheads becoming the unit of account; reductions and monitored storage of nuclear warheads either held as reserves or awaiting eventual dismantlement; the monitored dismantlement of nuclear warheads and of the disposition of resultant materials and components; transparency and regulation of all nuclear-weapon-related sites; and transparency and monitoring of overall flows of nuclear materials and warheads (that is, "chain of custody") through the nuclear-weapon life cycle. A great deal of analytic work has already been completed across these areas.[80]

Looking forward, the International Partnership for Nuclear Disarmament Verification (IPNDV), established in 2014, now offers a central focus for this type of nuclear disarmament verification concept and technology development. Carried out in collaboration with the Nuclear Threat Initiative (NTI), an American NGO, the IPNDV is a hybrid entity that brings together experts and officials from nearly 30 countries, including all of the NPT nuclear-weapon states. Its three working groups are focused respectively on "Monitoring and Verification Objectives" (I), "On-Site Inspections" (II), and Technical Challenges and Solutions (III). The working groups aim to produce initial results by late 2017.[81]

The new administration will need to decide quite soon whether to continue to invest resources in the IPNDV, measured in terms of financial, technical, political, and bureaucratic support. The new

administration should continue to invest in these resources. The results from the IPNDV will add to the conceptual and technical knowledge base that is necessary for future nuclear disarmament verification. Additionally, the IPNDV engages both Russian and Chinese technical experts, and in so doing contributes to the broader goals set out earlier of respectively revitalizing a U.S.–Russia arms control process and creating a U.S.–China process of mutual reassurance and restraint. The IPNDV is also important as a means of engagement and cooperation between NPT nuclear-weapon states and non-nuclear-weapon states in working on tough challenges related to nuclear disarmament monitoring and verification. As such, it helps to shape the debate about nuclear disarmament, while enhancing the credibility of the U.S. commitment to meet its NPT Article VI obligations. The IPNDV's results will also help strengthen the legitimacy among non-nuclear-weapon states of future transparency and verification approaches.

Wider participation in the IPNDV should also be encouraged. Originally the IAEA chose not to participate, but it now is doing so as an observer. Its involvement would add credibility and legitimacy to the work of the IPNDV, particularly if the IAEA eventually comes to play a role in the monitoring and verification of the longer-term nuclear disarmament process.[82] Also missing so far from participation are some of the more prominent non-nuclear-weapon states. This includes, e.g., South Africa (which declined to participate) and Austria and New Zealand (who apparently were not invited).[83] Renewed efforts are needed to encourage the participation of the former; the desirability should be reassessed of inviting the two latter nations along with still other missing strong nuclear disarmament advocates. For these countries, participation would provide an opportunity to help define how nuclear disarmament monitoring and verification requirements are defined (and, by doing so, to influence the future nuclear disarmament agenda); to shape how those requirements are to be met; and to build national and international capacity. From the IPNDV perspective, wider participation by these and other non-nuclear-weapon states would again enhance the overall credibility and legitimacy of the process and its results.

There are two further questions that the new administration will confront. These questions are: *How should IPNDV proceed after completion of the initial Working Group reports in late 2017?* and *What other complementary bilateral or unilateral initiatives should the United States pursue to build nuclear disarmament monitoring and verification capabilities?*

The initial results of the working groups will be paper studies that: define terms; assess requirements, capacities, approaches, and

capabilities; highlight best practices; and present lessons learned.[84] This work is an essential first step. Once completed, a next step would be to identify and carry out a number of pilot projects involving both nuclear- and non-nuclear-weapon states to develop and test promising concepts. Over time, under the IPNDV framework, consideration could be given to creating an international nuclear disarmament technology test bed. Alternately, where required by sensitivity and classification issues, specific areas for concept elaboration and technology development identified in this first phase of the IPNDV could be handed off to nuclear-weapon state participants to take forward. Having done so, the nuclear-weapon states would then report back to the overall membership of the IPNDV, again taking classification constraints into account. More generally, the initial results could provide the foundation to prepare a more comprehensive roadmap for the development of concepts and technologies that can be leveraged if—or more likely, when—the nuclear disarmament process again gains momentum.

Turning to possible bilateral or unilateral initiatives, it is taken here as a given that the new administration will continue the decade-long cooperation between the United States and the United Kingdom on nuclear disarmament monitoring and verification. As already suggested, the new administration also should seek to resume U.S.–Russian verification cooperation, with a renewed initial focus on the challenges of monitored dismantlement of nuclear weapons. Still another step would be to establish a U.S. nuclear disarmament verification test bed that could draw on expertise from across the U.S. national laboratories as well as other entities. Each of these steps would help to develop necessary concepts, technology, and, most importantly, understanding—not only for a resumed U.S.–Russian bilateral arms control process but for a longer term advance toward the posited 2045 look-long goal. These U.S. initiatives also would once again add credibility to a redefined U.S. nuclear disarmament agenda.

Disarmament Compliance Confidence- and Institution-Building

In the final analysis, however, all such efforts to develop monitoring and verification concepts and technologies for nuclear disarmament will only be as good as the readiness of states and their international institutions to stand up for compliance with future agreements.[85] Without confidence that disarmament and non-proliferation agreements will be implemented and that in the event of non-compliance, effective international responses will be taken to restore compliance, realization of the look-long vision will not happen.

Creating such confidence and institutions has long been an incremental process. Effective implementation of existing agreements creates the political and psychological conditions for additional agreements.

For these reasons, actions toward *bringing Russia back into full compliance with the INF Treaty* will be especially important. One approach to do so already has been suggested above. Russia's own lack of confidence in the durability of bilateral arms control, arising out of the Bush administration's unilateral withdrawal from the ABM Treaty and its reluctance to pursue treaty-based strategic limits, cannot be simply dismissed as mere posturing. Acknowledgement of Russia's concerns will reinforce the importance of a back to basics, zero-based joint assessment of bilateral arms control.

The importance of compliance confidence-building should also be built into any future process of U.S.–China mutual strategic reassurance and restraint. From this perspective, it would be preferable to start with more limited commitments and less ambitious undertakings that each country could confirm unilaterally, e.g., possible U.S. exchange of information on the future scope of U.S. missile defense and conventional strike programs, or a Chinese commitment not to seek parity. For both countries, the types of joint studies and activities illustrated above also could help build confidence at the "working level." So might joint technical experiments related to missile defenses, although here there would be greater ambiguities. At least initially, it might be desirable to steer clear of possible agreements that would be inherently difficult to confirm, e.g., mutual no-first-conventional-attacks declarations.

Non-proliferation compliance confidence-building will be equally essential. At least in the near-term, the focus will remain on ensuring effective Iranian compliance with the JCPOA. In this regard, one priority for the new administration will be to sustain the current EU 3 +3 coalition, notwithstanding already evident incentives among some coalition members to pursue political and, to a greater extent, commercial advantage. Highest-level political messaging can help to clarify the wider non-proliferation costs of failing to respond to Iranian chiseling at the margin, let alone major non-compliance. More broadly, compliance institution-building calls for sustaining and strengthening U.S. support for the IAEA and its nuclear safeguards systems, the CTBTO as the organization monitoring compliance with a future CTBT, and the Security Council as the ultimate backstop of countries' compliance with their non-proliferation obligations.

[79] For a related description of areas for concept and technology development, on which the above partly draws, see the Terms of Reference of the Working Groups created as part of the International Partnership for Nuclear Disarmament Verification (IPNDV) as well as the IPNDV "Monitoring and Verification Resource Collection." Both elements as well as other information are to be found on the IPNDV website at http://www.nti.org/about/projects/international-partnership-nuclear-disarmament-verification/

[80] Focused most on U.S. sources, the IPNDV "Monitoring and Resource Collection," for example, lists well over one hundred papers, studies, and related work done by individuals within the U.S. national laboratories as well as outside experts. There undoubtedly are many other studies done by experts in both nuclear- and non-nuclear weapon states that can be tapped. Over a decade of continuing cooperation between the nuclear-weapon communities in the United States and the United Kingdom as well as earlier but now suspended cooperation between the United States and Russia also offers lessons and insights on which to build. Though sometimes oversold, the U.S.-Russia-IAEA Trilateral Agreement as well as continuing cooperation between the United Kingdom and Norway on work related to nuclear warhead monitoring are other sources of insights and lessons learned.

[81] See http://www.nti.org/about/projects/international-partnership-nuclear-disarmament-verification/

[82] For an argument that the IAEA should be given considerably greater responsibility in this area, including for the establishment of an "IAEA Center for Nuclear Disarmament Verification Research and Development," see Thomas E. Shea and Laura Rockwood, *IAEA Verification of Fissile Material in Support of Nuclear Disarmament*, (Cambridge, Mass.: The Project on Managing the Atom, Belfer Center for Science and International Affairs, Harvard University, May 2015.

[83] The non-NPT nuclear-weapon states also are not participants.

[84] See the Working Group mandates. Ibid.

[85] For an elaboration of this point see George Perkovich and James M. Acton, op.cit., "Enforcement," pp. 99–115.

Some Closing Reflections

The global nuclear landscape for the new President of 2017 will be much more challenging and, in important ways, more dangerous than the one faced by President Obama in 2009. The new administration's response, as argued throughout this paper, needs to include revitalized nuclear deterrence, sustaining the current consensus for modernization of U.S. nuclear forces, and support for defenses and other actions to protect against the nuclear dangers it will confront. Highest level leadership attention to these matters will also be required. It will be necessary, as well, to continue to strengthen American extended deterrence relationships with allies in Europe and Asia to reduce the likelihood of political if not military adventurism—whether by Russia in the Baltics, China in the surrounding seas, or North Korea on the Korean peninsula. These elements could grow in importance, moreover, if it proves impossible to prevent the emergence of a North Korean nuclear missile threat to the American homeland, a U.S.–Russia slide into a new Cold War, and/or growing strategic competition with China.

At the same time, the new administration should also articulate and pursue a redefined U.S. nuclear disarmament agenda as part of a more comprehensive response to nuclear challenges and dangers. There are important political and strategic reasons to do so. Among those reasons are sustaining domestic and alliance support for a new nuclear consensus; seeking to move the U.S.–Russia and U.S.–China strategic relationships in more cooperative directions; protecting the global non-proliferation regime; and helping to reduce the risk of a next use of a nuclear weapon. Properly crafted and pursued, a redefined nuclear disarmament agenda can be a valuable contributor to the goal of reducing global nuclear dangers.

At the core of a redefined agenda should be a strategy of looking long and throwing short. The American look-long vision proposed and explored in this paper would be a world of 2045, one hundred years after the first and so far only use of nuclear weapons, in which nuclear weapons have been eliminated strategically as means of statecraft (but not completely abolished physically). This paper also has also explored baskets of throw-short initiatives whose purpose would be to reduce nuclear dangers as well as to put needed building blocks in place for progress toward that vision. In light of that discussion, some

key throw-short priorities early in the new administration stand out. Several very likely challenges to this paper's overall argument should also be addressed head-on.

Some Throw-Short Priorities toward the Look-Long Vision

One priority is to restore Russian adherence to the *Reagan-Gorbachev injunction* that a "nuclear war cannot be won and must not be fought," both by disabusing Putin's Russia of its apparent belief that the threat or use of nuclear weapons is a path to success in a crisis or conflict and by making it clear directly to President Putin that continued Russian nuclear saber-rattling will backfire at his own expense. Even while sending this message, however, a mix of cooperative, measured, and tough-minded approaches should be pursued in an attempt first to *sustain and then to revitalize the U.S.–Russian arms control process.* Successfully doing so would serve both countries' political and strategic interests. With the U.S.–China strategic relationship at a possible turning point, reinvigorated efforts are required to convince China's leadership to go beyond traditional dialogue to pursue a new process of *U.S.–China mutual reassurance and restraint*. For China, the logic today of doing so may be more compelling than in the past. Absent Chinese readiness to engage, the new administration will have no choice but to act unilaterally to reduce its uncertainties about China's programs and intentions and, even more importantly, to take whatever actions are strategically necessary to deal with threats from North Korea, despite possible spillovers for U.S.–China strategic stability.

Globally, continued support for *strengthened engagement with the NPT non-nuclear-weapon states* needs to remain a U.S. priority. Setting out a detailed U.S. look-long nuclear disarmament vision and its building blocks would strengthen many aspects of U.S. NPT diplomacy. It would also focus attention on the tough nuclear disarmament work still to be done, from going beyond today's multilateral nuclear disarmament stalemate to disarmament compliance confidence- and institution-building. Here, the new administration should affirm its political, bureaucratic, and financial support for the International Partnership for Nuclear Disarmament Verification to advance the process of putting in place the needed verification and monitoring technologies for future nuclear disarmament agreements. It should also press hard to make discussions of cooperative actions to reduce the risk of a next use of nuclear weapons a central focus of an expanded P5 work program.

Three Criticisms of the Redefined Nuclear Disarmament Agenda

This paper's argument for a redefined U.S. agenda for nuclear disarmament—and particularly its look-long vision of the elimination

of nuclear weapons strategically as means of statecraft by 2045—will be challenged. The nature of those challenges, however, is likely to vary considerably among different critics.

Advocates of accelerated progress on nuclear disarmament—both at home among supporters of the Prague Vision but even more so abroad among disarmament activists in the humanitarian movement and in the NPT—will argue that strategic elimination does not go far enough. To this group, the U.S. goal should be the complete physical elimination of nuclear weapons not by 2045 but even sooner. Indeed, for them, the time to negotiate a nuclear-weapon ban treaty is now–even without the nuclear-weapon states. Moreover, particularly at home, advocates of accelerated nuclear disarmament can be expected to oppose actions to revitalize nuclear deterrence and pursue nuclear modernization on the grounds that those actions would undercut even this, for them, too modest nuclear disarmament agenda.

However, as argued initially, the building blocks of the complete physical elimination of nuclear weapons, that is, nuclear abolition, do not exist now—and may not ever exist. Even the building blocks of strategic elimination cannot be fully put in place quickly, or without, in some cases, historic changes in how today's nuclear-weapon states view their security and the roles of nuclear weapons. For that very reason, the road to the nuclear abolition sought by nuclear disarmament advocates inexorably runs through strategic elimination—only once nuclear weapons are no longer seen as essential means of statecraft will today's nuclear weapon states think seriously about their abolition. As for pursuit of a nuclear-weapon ban treaty now, it is much more likely to prove not a great leap forward for nuclear disarmament, but a costly detour that will make it harder to energize sustained progress on the part of the nuclear-weapon states toward the look-long vision set out here.

A U.S. readiness to take required actions to revitalize nuclear deterrence, modernize the American nuclear posture, and adapt other strategic capabilities—and to take further unilateral and alliance steps if greater strategic competition cannot be avoided—would reinforce, not undercut, pursuit of strategic elimination. Demonstrating that readiness is one of the most important practical arguments that Washington can make with Moscow and Beijing to convince them that their interests would be better served by cooperative engagement. At least for Moscow, there is a partial precedent. The United States and its NATO allies last confronted a comparable rising nuclear danger from Moscow in the early 1980s, in that case from Soviet deployment of SS-20 missiles that posed a direct threat to the security of NATO nations. NATO's response of the very politically difficult but successful deployment of U.S.–NATO Pershing 2 and cruise missiles proved critical

to Moscow's decision to resume the negotiations that led to the INF Treaty eliminating these missiles from both countries' nuclear arsenals.

A very different criticism is likely to be that the look-long vision of strategic elimination by 2045 is too much of a stretch goal because the full set of building blocks needed for its realization cannot be put in place by then, if ever—even assuming the best of efforts by cooperating countries. These building blocks, however, differ considerably in terms of the challenges posed to put them in place. There are, moreover, way stations on the road to strategic elimination that would allow for adaptations to successes and failures in its pursuit, temporary halts, and even a rethinking of that very goal if it ultimately proved unreachable. That said, to return again to the earlier argument, comparable great changes have occurred historically, motivated by some mix of enlightened national self-interest and strategic shock. The challenges and dangers of the nuclear landscape may well prove sufficient to create the former, and could also produce the latter. The prospects for ultimate realization of strategic elimination of nuclear weapons or very considerable progress toward that goal should not be rejected before even setting out.

Skepticism about the readiness of other nuclear-weapon states to cooperate, most importantly Russia and China, will almost certainly be a third persistent criticism of this paper's overall argument. For reasons set out throughout, however, the national security interests of these other nuclear-weapon states would be served by such cooperative engagement. More essential, as just recalled, there are ways by which the United States can drive this point home. Using both political messaging and actions, the new administration can make clear that while the United States remains committed to pursuing cooperative engagement with Russia, China, and others, it is also fully prepared to act on its own in addressing today's nuclear challenges and dangers if that preference for cooperation is not reciprocated. Put most starkly, the United States needs to be prepared to live in a more competitive nuclear world even as it continues to set out and pursue an American look-long vision of a 2045 nuclear world of strategic elimination.

At the same time, these skeptics also are likely to warn that setting out a redefined U.S. agenda for nuclear disarmament will be used by nuclear disarmament advocates at home and abroad to oppose those very U.S. actions that are or may become needed to revitalize nuclear deterrence, modernize U.S. nuclear posture, and strengthen other military capabilities to meet nuclear dangers. As already acknowledged, the new administration should expect such arguments from at least parts of the U.S. nuclear disarmament community. It will need to

answer convincingly, partly in the ways suggested above. That said, in response to the skeptics, here, too, the INF precedent is germane. Without a robust arms control component, the United States in the early 1980s would not have been able to gain the agreement of all NATO governments to deploy Pershing 2 and cruise missiles in response to the changed Soviet threat or to implement successfully that decision in the face of strong opposition from parts of the European public. This basic logic may be even more applicable in today's world, with some levels of continued support at home, within NATO, and more widely abroad for the goal of complete nuclear abolition.

Implicit in these criticisms, there is a further issue: What if the new administration sets out the redefined nuclear disarmament agenda proposed here but it proves too difficult to get from today to a 2045 world of strategic elimination? It could prove so in the immediate future, particularly because Russia and China are unwilling to engage; in the near- to longer-term because of the complexities and difficulties of putting in place some key building blocks, even assuming good will and best efforts on the part of the United States, Russia, China, other nuclear-weapon states, and, in some aspects, also the non-nuclear-weapon states; or at any point from now forward, because a next use of a nuclear weapon rather than energizing pursuit of strategic elimination makes today's nuclear-weapon states even less willing to give up their nuclear weapons and also creates new proliferation pressures.

In each case, setting out the look-long vision of strategic elimination and its associated set of throw-short nuclear disarmament initiatives will leave the United States no less secure—and very possibly, considerably more secure. If Russia and China remain unwilling to engage, as argued, setting out the agenda will strengthen the new administration's efforts to sustain and gain political support for actions needed in response. If, over time, it proves too difficult despite best efforts to put completely in place all of the needed building blocks, the progress achieved toward the look-long vision will be valuable in and of itself in reducing nuclear dangers. This is especially so if progress includes avoiding ever-heightening nuclear competition with Russia and China as well as a new focus of the P5 on cooperation to reduce the risk of a use of a nuclear weapon and at least some lessening of today's great polarization within the NPT. If a next use of a nuclear weapon cannot be prevented, as the world's nations decide how to respond, the goal of strategic elimination will still provide a valuable counterweight to likely calls for greater reliance on nuclear weapons by existing nuclear-weapon states, new proliferation decisions, and very differently, pursuit of a great leap into nuclear abolition even without having put in place the needed building blocks.

The American Commitment to a Safer Nuclear World

The uncertainties of today's American political landscape call for one closing reflection. As made clear initially, this paper assumes that the new administration will remain committed to American global engagement and leadership, whether from the start in the case of a Democratic administration or after some initial soul-searching in the case of a Republican one. At the same time, even assuming that the new administration agrees with this paper's basic argument that U.S. interests would be served by a redefined agenda for nuclear disarmament as part of a comprehensive response to nuclear challenges and dangers, that argument and some, if not many, of its specific proposals would almost certainly be viewed more skeptically in a Republican administration than a Democratic one. With that said, all past administrations since that of President George H.W. Bush have sought to find a way to transform the nuclear legacies inherited from the Cold War and indeed, all Presidents from President Harry Truman at the very dawn of the nuclear age, have sought to build toward a safer nuclear world for both the United States and the world as a whole. That reality undergirds and legitimizes this paper's overall argument for a redefined U.S. nuclear disarmament agenda. Ultimately, the arguments of this paper will need to stand or fall on their own logic. If this paper has helped to broaden, shape, and influence the coming debate about how best to address today's global nuclear challenges and dangers, it will have more than served its goal.

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"Here Lewis Dunn thinks big. Building upon decades of listening and probing as scholar/practitioner, he paints a vision of a better world, achievable by 2045 — the 100th anniversary of the nuclear age. From this, he maps back to first steps. To offer more decision space for compromise, he takes a comprehensive approach to arms control, nonproliferation, and disarmament, folding in deterrence, defense, and diplomacy as he frames the key questions. No one will agree with everything he suggests. That is the strength of his work. In an increasingly polarized world, Dunn presents initiatives reachable from different directions by those whose views are now at odds. One cannot help but admire his dialectic and the accompanying calls for engagement and experimentation. The next administration should pay close attention to his analysis."

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