

BRIEFER

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A Practical Strategy for Nuclear Risk Reduction and Disarmament: Fulfilling the Code of Nuclear Responsibility

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INTRODUCTION

There has been much work done over the last few years in generating concepts of nuclear risk reduction--- from governments and non-governmental organizations alike. This has resulted in a plethora of promising ideas with often great overlap, and many of those involved feel that this multiplicity and overlap is positive. “From a thousand seeds shall the much-needed flowers bloom,” as one United Kingdom (UK) Foreign and Commonwealth Office official said earlier this year.

Despite this proliferation of ideas, there remains a lack of an overall strategy to take these nuclear risk reduction suggestions and shape them into a pathway to achieve the treaty-mandated disarmament end state of the Treaty on the Non-Proliferation of Nuclear Weapons (NPT). This briefener argues that such a practical strategy is a necessity to make progress in both risk reduction and disarmament and outlines a workable structure.

THE NEED FOR A NUCLEAR RISK REDUCTION AND DISARMAMENT STRATEGY

The closest thing to a strategy for enabling disarmament may be the U.S.-led project examining the “conditions to enable nuclear disarmament,” or CEND. However, CEND may not be structurally optimal for driving practical progress on urgent nuclear risk reduction. The U.S. Department of State formed CEND in 2018 and ran several working sessions to discuss the global security environment and its relation to nuclear weapons. But by focusing on the “whole-world” actions necessary to create the backdrop against which nuclear armed states could realistically wean themselves off these weapons, it is vulnerable to accusations that it is not addressing the very near-term and increasingly urgent risk reduction actions those states need to take. As of March 2021, the Department’s website still describes these conditions as “obstacles to further progress on nuclear disarmament.”¹ In short, unless this approach is changed, it is vulnerable to criticism that it allows nuclear-armed states to put off risk-reducing actions.

However, a strategy for risk reduction and disarmament, and an equal understanding of the broader security conditions represented by CEND, are ultimately symbiotic. Without a properly prepared and executed CEND project towards the NPT end-state, the later blocks in the strategy proposed below are rendered unachievable.

This short paper seeks to build upon the concepts and actions within our previously-articulated Code of Responsibility² which set forth adjustments in nuclear armed states’ doctrine, declaratory policies, postures, and capabilities that would increase nuclear strategic stability with no loss to their security. This paper builds on that work by placing a selection of key risk reduction actions into a strategy designed both to reverse the recent rise in nuclear risks and make positive steps on the broader pathway toward meeting NPT obligations.

This strategy would lead to a genuine reduction in salience of nuclear weapons in global power politics and security agendas, and ultimately their reduction and removal. Most of the steps outlined have been proposed in the past by us and others, yet this paper seeks to place them in a strategic framework to better understand and facilitate their enactment.

As such, this briefer begins with a short overview of current strains and issues in the nuclear ecosystem. It then details the proposed strategy, including **21 specific steps** to prioritize divided into preparative and formative actions. It then notes a few examples of hurdles to overcome in advancing this strategy.

AN EVOLVING AND FAILING NUCLEAR ECOSYSTEM

Nuclear capabilities, policies, and postures, and their place in each nuclear armed states’ national security, have developed over time into a complex ecosystem. They are entangled in the complexity of these states’ security thinking and particularly intertwined with current and emerging non-nuclear capabilities and technologies. In some of the older nuclear armed states, they are also complicated by the baggage of history and continuation (in part) of doctrine and concepts from an earlier, very different nuclear world.

The optimism of the Obama Prague speech in 2009, and the subsequent NATO Strategic Concept, has given way to a world of increased nuclear risks. A notable indicator of this deteriorating risk landscape

¹ U.S. Department of State, “[Key Topics – Bureau of International Security and Nonproliferation](#),” accessed March 30, 2021.

² John Gower, “[Improving Nuclear Strategic Stability Through a Responsibility-Based Approach: An Updated Platform for 21st Century Arms Control](#),” the Council on Strategic Risks, October 25, 2019.

was the UK Integrated Review,³ published on March 16, 2021. In the section covering the UK nuclear deterrent, three elements gave rise to concern: on stockpile numbers, on openness and on the broader roles for its nuclear weapons.

The UK was previously at the vanguard of restraint and reduction - both demonstrably and in its declaratory statements. However, this Integrated Review announced a reversal of its decade-old commitment to a warhead stockpile reduction. From a 2010 commitment to reduce warheads from 225 to 180 (supporting an operational arsenal of 120 warheads⁴), the UK has now stated it will increase to a warhead stockpile ceiling of 260. There was no mention in the Review of any resultant change in deployed operational warheads, but given the new shroud of secrecy, potential adversaries will assume an increase.

While the bulk of commentary has been focused on these numbers, the UK also announced it will once more draw a shroud of secrecy (badged as “ambiguity”) over every warhead number it has previously made public. At a single stroke the UK can no longer claim to be the most open or the most forward-leaning nuclear weapon states in the NPT, and its new secrecy will at least complicate its next return to that Treaty Review Conference.

Finally, in a worrying mirror of the language in the U.S. Trump administration’s Nuclear Posture Review of 2018, the UK has further broadened its caveats to the Negative Security Assurances it gives to non-nuclear states. Should the non-nuclear threats within the caveats manifest themselves, the UK would consider a nuclear response, and therefore consider these threats deterred with its nuclear arsenal. Given that the most clear and immediate dangers of new technologies are not a WMD-like capacity for destruction, but their capacity to add to miscalculation and misinterpretation escalation risks that are likely to lead to the use of nuclear weapons, these additional caveats represent the greatest risk to strategic stability and undermine further the non-proliferation ideals of the NPT.

It remains important to keep this in perspective and focus on the “why?” While the UK’s current warhead cap increase is in only strategic weapons (as opposed to tactical, which it doesn’t possess), and is not significant in scale compared with the arsenals of Russia and the United States, the actions of the UK should be seen as a significant “canary in the mine” of risk. The fact that this previously forward-leaning country decided the risks inherent in their absolute minimum number of warheads (calculated in the runup to the 2010 reduction announcement) were no longer supportable, despite the inevitable political and diplomatic opprobrium that would follow, clearly demonstrates that risks are rising, and a change of direction is urgent.⁵

Further, in a more diverse and multipolar and what could be described as a post-detente post-arms control world, countries which maintain significant numbers (and varieties) of less-than-strategic nuclear capabilities (i.e., “smaller or shorter range” nuclear weapons) are adding risk. This has become for some the pursuit of new and diverse full-spectrum nuclear capabilities, piling risk upon risk.

³ UK Government, [“Global Britain in a competitive age. The Integrated Review of Security, Defence, Development and Foreign Policy,”](#) CP 403, March 2021.

⁴ UK Government, [“Securing Britain in an Age of Uncertainty: The Strategic Defence and Security Review,”](#) CM7948, October 2010.

⁵ For a deeper analysis of the UK Integrated Review, see John Gower, [“Hubris, Hypocrisy or Hedge? - Seventy Six Words - UK Nuclear Policy Shifts in the Integrated Review of March 2021”](#) BASIC, April 7, 2021.

Currently, those who assert that it is worth these risks to pursue “like-for-like” deterrents base such assertions largely on the notion that escalation into the nuclear domain with these “smaller” nuclear weapons can swiftly be controlled. This entirely unproven fallacy is the bedrock of the most recent and imminent proliferation and growth of dual-capable weapons, and less-than-strategic, so-called “lower-yield” weapons. Indeed, the UK explicitly cites these weapons as a direct contributor to their change of direction.

While this nuclear ecosystem has been present in various forms for decades, changes in the broader security environment are making significant risk-reduction activities even more urgent. These changes can be grouped into four fundamental areas:

- Increasing range and precision in conventional weapons capabilities that operate in the “strategic effects arena” that was previously occupied only by nuclear weapons capabilities.
- Novel technologies (artificial intelligence/machine learning, drones, and others).
- Effects of climate change adding significant instability to the global security environment through wide-ranging impacts on food, water, energy and critical infrastructure security, major physical threats to populations from sea level rise, wildfires and extreme weather, and hyper-nationalist political responses to climate-exacerbated migration.
- A general slide away from the world order in which the nuclear ecosystem has so far been contained.

It is the nexus of these systemic changes that demand a strategy to reduce risk, restart arms control, and make genuine progress on reducing the scale and scope of the most destabilizing nuclear systems. The luxury of time, present in hindsight throughout and after the Cold War, is no longer a given.

There are countless ideas to form the basis of progress, if they can be coordinated into a compelling strategy to give shape and prioritization to nuclear armed states’ planning. We and other experts have developed several, including steps focused on reducing the unique risks of nuclear-armed cruise missiles.⁶ Since the end of the Cold War, many nuclear risk reduction concepts have also been developed in international and multilateral fora. The 2010 NPT Review Conference led to an agreed 64-point Action Plan that includes specific steps toward disarmament, nonproliferation, and supporting peaceful uses of nuclear energy.⁷

However, as described above, progress has largely stalled, and indeed some key nations are moving in directions opposed to these actions.

⁶ Andrew Weber and Christine Parthemore, “[Cruise Control: The Logical Next Step in Nuclear Arms Control?](#)” *Journal for Peace and Nuclear Disarmament*, October 23, 2019; Vladimir Baranovsky, “[Nuclear-Armed Cruise Missiles: Towards a Global Ban? Russia’s Perspective.](#)” Toda Peace Institute, October 2018.

⁷ United Nations, “[2010 Review Conference of the Parties to the Treaty on the Non-Proliferation of Nuclear Weapons: Final Document Volume I.](#)” 2010.

A NEW STRATEGY

Progress is unlikely without a logical and targeted prioritization of the current “all-equal” steps set by the NPT Action Plan and elsewhere. The following proposed strategy is meant to provide such prioritized, concrete policy suggestions and milestones in order to move past the current impasse. It begins with key tenets to guide this prioritization, followed by specific preparative and formative steps that nuclear armed states should begin working toward immediately.

As introduced earlier, this strategy builds on a 2019 proposal presented to the United Nations First Committee of the adoption of a Code of Responsible Nuclear Armed States as the bedrock of these actions.⁸ This proposal sought 10 pledges from nuclear-armed states across 6 areas as can be seen in this summary:



⁸ John Gower, “[Improving Nuclear Strategic Stability Through a Responsibility-Based Approach: An Updated Platform for 21st Century Arms Control](#),” The Council on Strategic Risks, October 25, 2019.

The full strategy is also designed to build on historical risk reduction diplomatic tracks mentioned earlier.

The lodestone throughout this strategy is **risk reduction**. The greatest risk of the initiation of nuclear conflict today is from countries' miscalculations or misinterpretations driven by one another's postures, policies, and actions. The most likely drivers of this are:

- Ambiguous or multichannel communications, both in static declaratory policy and crisis.
- Declaratory policies advocating or indicating nuclear responses to non-nuclear threats.
- Prevalence of dual-capable weapons and their use (or threat of) in conventional conflict in a crisis.
- High readiness of forces, especially if any form of delegation from the national command authority has taken place or is part of normal protocol.

Nuclear-armed states can take unilateral, bilateral, and multilateral actions to reduce these drivers of miscalculation and misinterpretation risks. In doing so, they should adopt these key tenets:

First, strategic nuclear deterrence remains critical to nuclear-armed states, and this will underpin their views on nuclear strategic stability while they take stabilizing steps like those listed below. Put simply, the actions below allow nuclear armed states to make progress in reducing risks (miscalculation and misinterpretation in particular) and, for NPT signatories, toward commitments enshrined in that Treaty, while maintaining the nuclear deterrence on which their current national security strategies depend. The steps prioritized below are stabilizing.

Second, the proposed scheme below shows a rough sequencing, but any sequencing is less important than the successful achievement of each action. The steps below can and should be pursued in whatever order is most politically viable by the nations involved.

Third, while the bulk of these actions in the initial stages of risk reduction are likely to fall to the P5 nations, eventually all 9 nuclear armed states would need to be involved.

Fourth and finally, while this strategy looks narrowly at progress in the nuclear domain, the latter half of the scheme is only plausible if more general progress in international security (such as CEND activities described above) is being achieved. The United States in particular must lead in articulating a revised role of CEND to prevent it from blocking progress in the nuclear domain and empower it as a forum for supporting risk-reduction actions.

With these tenets in mind, the following 21 steps form a broad strategy toward progress.

The Necessary Components of the Strategy

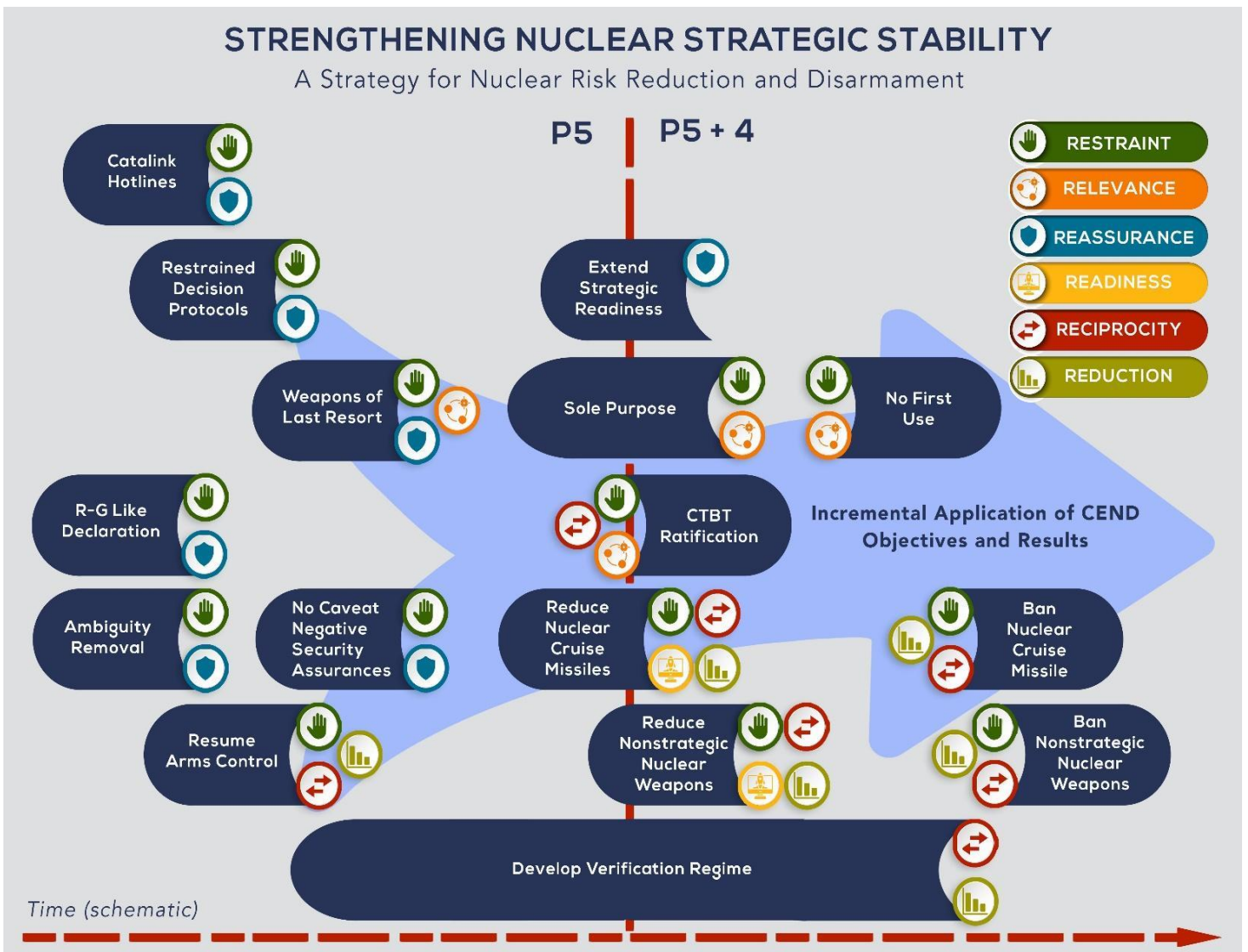
Although these 21 steps are loosely listed in sequential order, most do not have a critical path order. Many efforts by nations, international organizations, and other experts have examined these as “stepping stones” or parts of a focused action plan. However, too often these have implied a rigid timetable or structure which has contributed to preventing (or at best delaying progress towards) actual implementation.

To break from this rigidity, this strategic framework is formed from two rough groups:

- **Preparative Steps:** Potentially parallel and preventative measures aimed at diverting from the current downhill strategic direction, and
- **Formative Steps:** Largely concrete actions for enacting and cementing meaningful change.

Some of these steps would benefit from multilateral agreements, and some perhaps are more likely if started by a series of unilateral initiatives amongst the nuclear armed states (as indeed progress on the Comprehensive Test Ban Treaty [CTBT] and No First Use already are). Some are more likely to be initiated under the aegis of the P5 within the NPT, though, as noted above, all must eventually achieve universal agreement amongst all 9 nuclear armed states. The NPT will need, in time, to find ways in which it can live with such an expansion of remit to meet its fundamental objective.

This list does not seek to explain each measure in detail, and indeed, many can take a variety of forms. The Council on Strategic Risks is building on this paper with longer explorations linked to many of these specific steps; indeed some are already published. For now, the bare tenets of each are included to allow an overall understanding of the framework, and a schematic diagram of these steps in the strategy, and how they grow from and relate to the Code of Responsibility is given below:



Preparative Actions

Adopt a Code of Responsible Nuclear Weapon Ownership (the “Code”).⁹ This would be a strong indication by the nuclear armed states of their commitment to risk reduction on the path toward eventual disarmament. Each of the subsequent components contribute to the principles of this Code. This action is not shown on the graphic above.

Adopt more nationally-restrained nuclear decision protocols. Nuclear armed states should be challenged to declare their current decision protocols and institute nuclear decision protocols which emphasize and improve restraint.

Declare nuclear weapons as weapons of last resort. Nuclear armed states should work to make universal a declared policy that nuclear weapons are weapons exclusively of last resort, through an open dialogue in international fora, and thus establish and underpin a norm against warfighting with nuclear weapons.

Make a substantive declaration on the futility of nuclear conflict. Nuclear armed states should consider a statement aligned to the philosophy of the Reagan-Gorbachev doctrine (while acknowledging the vastly different geostrategic environment at that time), ideally by making a statement at the 2021 Review Conference, and to include further and meaningful discussions on collaborative mitigation of the effects of any use.

Pursue a project to deliver CATALINK (or similar) hotlines. The CATALINK project¹⁰ seeks to establish a secure, trusted, and dependable nuclear crisis communications technology in the context of a rapidly evolving security environment. Such hotlines would represent a tangible risk reduction measure and one which brings no immediate downside to any nuclear-armed state; one which each of them could support without an iota of change in their national security perceptions. Based on a culture of openness and testing amongst all stakeholders, it would offer a secure and resilient nuclear crisis communications system to a highly complex multipolar world.

Pursue removal of destabilizing ambiguity in declaratory policy. Nuclear armed states should be challenged on their retention of ambiguity across their declaratory policies and encouraged to reduce ambiguity where it directly contributes to the risk of miscalculation and misinterpretation.

Adopt no-caveat Negative Security Assurances (NSAs). As a precursor to announcing a posture and policy of sole purpose, nuclear armed states should be challenged to examine and remove the current caveats on their NSAs. This would require positive action to counter these non-nuclear threats by non-nuclear means.

Declare a policy of nuclear weapon sole purpose.¹¹ Nuclear armed states should align the total of their posture to their rhetoric on the extremity of use; reduce miscalculation and escalation risk and separate

⁹ John Gower, “[Improving Nuclear Strategic Stability Through a Responsibility-Based Approach: An Updated Platform for 21st Century Arms Control](#),” the Council on Strategic Risks, October 25, 2019.

¹⁰ Institute for Security and Technology, “[Catalink - Preventing the onset or escalation of conflict by building a resilient global communications system](#),” 2019-2021.

¹¹ Andrew Weber and John Gower, “[Nuclear Weapon Sole Purpose: The Strongest Future for U.S. National Security and Global Stability](#),” The Council on Strategic Risks, January 12, 2021.

firmly and conclusively non-nuclear and nuclear conflict. Sole purpose is the gateway to significant alterations of posture, philosophy, order of battle, and stockpiles of nuclear armed states.

Resume arms control negotiations in bilateral and multilateral fora. Both for its own sake and as a precursor for further improvements in nuclear strategic stability, an assumption of such negotiations is an essential and early component of this strategic framework.

Formative Actions

Reduce numbers and reliance on nuclear cruise missiles. Nuclear armed states should be challenged to implement the recommendations of former U.S. Secretary of Defense William Perry, and others, to take concrete steps to reduce or remove these types of non-strategic nuclear weapons from current and future arsenals.¹²

Reduce numbers and reliance on all non-strategic nuclear weapons. The earliest and most potent contribution to a more stable and less hazardous geopolitics will come from this element of the strategy.

Negotiate and sign a nuclear cruise missile ban. This should be the first significant ban, building on the preparative components that would essentially render irrelevant these most destabilizing elements of the current nuclear ecosystem.¹³

Pursue a nuclear-only INF Treaty follow-on. There are many options for shaping such an agreement, including whether to pursue political agreements preventing a resurgence of intermediate-range nuclear forces in advance of legal commitments. Two former U.S. Department of Defense experts have recommended an initial focus on intermediate range, ground-launched nuclear cruise missiles.¹⁴

Extend strategic nuclear weapon readiness. Given achievement of all the preparative components, this would be a natural subsequent position, a gateway to future components, and an indicator of a significant reduction in nuclear weapons salience in national security strategies.

Achieve global CTBT ratification. A fundamental indicator of truth in nuclear armed states' declarations of adherence to all articles of the NPT, a formal ratification of the CTBT by all nuclear armed states would signal an agreement that the testing of new warhead types is unlikely to be needed.

Develop verification protocols and techniques. This is clearly a non-sequential component as work on this has been underway now in some areas for some years, but these techniques and agreed protocols are an essential element of subsequent components involved in the ban on and removal of existing nuclear capabilities.¹⁵

Agree an increasingly comprehensive range of CEND conditions and activities. This is another non-sequential component, but fundamental to the long end process marked by the components below. Nuclear

¹² See, for example, Secretary William Perry and Andy Weber, "[Mr President. Kill the New Cruise Missile.](#)" *The Washington Post*, October 15, 2015.

¹³ Andrew Weber and Christine Parthemore, "[Cruise Control: The Logical Next Step in Nuclear Arms Control?](#)" *Journal for Peace and Nuclear Disarmament*, October 23, 2019.

¹⁴ Natasha E. Bajema and Christine Parthemore, "[The Next Great Idea in Nuclear Arms Control: Putting the 'N' Back in INF.](#)" Council on Strategic Risks, February 2, 2021.

¹⁵ The United Nations Institute for Disarmament Research (UNIDIR) is among organizations that have put forth promising new concepts related to verification. See, for example, Pavel Podvig, Ryan Snyder and Wilfred Wan, "[Evidence of Absence: Verifying the Removal of Nuclear Weapons.](#)" UNIDIR, September 10, 2018.

armed states will only release their grip on their arsenals where progress in other areas of geopolitical and weapon risks are such that there is no risk from losing the general deterrent effects of these weapons.

Negotiate and sign a non-strategic nuclear weapons ban. Given success at all the preceding components, this is the natural sequitur to the cruise missile ban and a necessary precursor to the complex end activity on strategic weapons.

Declare a universal policy of No First Use (NFU). Having reduced to simply strategic weapons and made sufficient progress on CEND implementation, the case for NFU will become overwhelming. NFU universally employed is in many ways the starting gate for any process towards full nuclear disarmament.

Negotiate a process to full nuclear disarmament. This component is the full embodiment of NPT article 6. The process will need to be quite different from the arms control and reduction measures previously agreed between the Cold War superpowers. The equivalence of reduction between vastly different nuclear armed states is very unlikely to be simply numeric and more complex interrelationships are likely to be necessary. The creation and involvement of an international body similar in concept to the Organisation for the Prohibition of Chemical Weapons (which has responsibilities for verifying the elimination of these weapons and investigating alleged breaches) is likely to be an element of this end state work.

Sign the Treaty on the Prohibition of Nuclear Weapons. Although not included in the strategy formally or the graphic above, ultimately this treaty, or a derivative of it appropriate to the prevailing circumstances, will be the omnilateral lid on a Pandora's Box of nuclear weapon capability and threat.

OVERCOMING HURDLES ON THE PATH FORWARD

There are numerous hurdles to taking these preparatory and formative actions. Many are known well today, including the incredibly challenged relations between the United States and Russia and relative inexperience of many nuclear armed nations such as China in working with others to agree and then implement verifiable nuclear arms control agreements. Lack of trust among many nations involved, and pressures such as accelerating technological complexity, global pandemics, and the climate crisis, are likely to add challenge.

It is worthy of note that an element of NPT Action Step 2, the principle of irreversibility, could be seen as a threat to any positive unilateralism on the part of the nuclear armed states. Action 2 states that “*All States parties commit to apply the principles of irreversibility, verifiability and transparency in relation to the implementation of their treaty obligations.*”¹⁶ Faced with irreversibility, the nuclear-armed nations have become very conservative and are less likely in the future to “try out” positive unilateral steps. Notably, all the positive arms control activity predates the 2010 adoption of this irreversibility action by the NPT and none since.

Unilateral action offers significant hope for progress, especially if copied by other nuclear armed states once evident there are no perceived ill effects on national security. The irreversibility principle restricts progress to what can be agreed by the P5, and if the last decade is any judge that has at best been the most anodyne of actions.

¹⁶ United Nations, “[2010 Review Conference of the Parties to the Treaty on the Non-Proliferation of Nuclear Weapons: Final Document Volume I](#),” 2010, p. 20.

The strategy advocated in this paper is more likely to succeed without this presumption of irreversibility in the early years. Irreversibility can be locked in by agreement and treaty as genuine multilateral progress is achieved. Likewise, flexibility in how this work is pursued, and in how states set aside or overcome hurdles like these, will be paramount.

CONCLUSION

Individually, each of the 21 actions presented in this paper would help reduce nuclear risks that are growing ever more dangerous. Together, they form a clear but flexible path forward that states can and should pursue immediately. This strategy prioritizes measures that have immediate value in reducing miscalculation and misinterpretation risks. Most of the actions it prioritizes for the near term have been explored in detail by governmental and nongovernmental experts and discussed among officials from nuclear armed states and in international fora. Their successful pursuit will pave the way for further future steps toward disarmament, such as the eventual elimination of strategic nuclear weapons. Yet for the coming years, the steps in this strategy will allow states to make concrete but measured progress while maintaining deterrence and restoring nuclear strategic stability.

The creation of an agreed strategy, with a mapped and flexible path, would allow all nations to understand that while risk reduction measures are urgently necessary in themselves, they also form the bedrock of a pathway to a stable series of nuclear weapon reductions in type and scale, and ultimately safe disarmament.

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