

The End of Nuclear Warfighting: Moving to a Deterrence-Only Posture

AN ALTERNATIVE U.S. NUCLEAR POSTURE REVIEW

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Executive Summary

The United States should adopt a deterrence-only nuclear strategy that recognizes neither Russia nor China has strong intrinsic reason to initiate a nuclear attack on the United States and that deterring such attacks can be assured by a relatively small number of survivable U.S. nuclear weapons capable of responding to the immediate circumstances of enemy aggression. This shift would allow the United States to halve the size of its nuclear arsenal and the number of targets in its war plans. It would also pave the way to even deeper reductions and facilitate progress toward a nuclear-weapon-free world.

The primary targets of a deterrence-only strategy would consist of key elements of state control and the economic-industrial base that is the source of its power and wealth: leadership facilities; banking, communications, and transportation networks; oil pipeline and shipping infrastructure used in petroleum exporting; and oil refineries, metal works plants and electric power plants. The destruction of this infrastructure is not time sensitive and therefore would not require prompt or preemptive strikes to disable it. Additionally, an estimated 30 to 50 percent of these targets are vulnerable to conventional and cyberattacks, allowing U.S. non-nuclear forces to be substituted for nuclear weapons in substantial numbers and de-escalatory non-nuclear choices added to the president's menu of wartime strategic options.

U.S. conventional capabilities could destroy the vast bulk of these vulnerable targets in response to enemy attack. Conventional forces are sufficiently survivable across a broad spectrum of conflict scenarios to perform this mission. In addition, advanced offensive cyber capabilities have been developed to provide a means of non-nuclear attack against many of the key elements of an adversary's state control, power, and wealth. Cyberwarfare capabilities are more vulnerable than conventional forces in high-intensity conflict but they offer an effective alternative to nuclear weapons for disabling or disrupting an adversary's critical infrastructure and command, control, and communications (C3) facilities during earlier stages of conflict.

A shift to a deterrence-only nuclear strategy with its commitment to retaliation implies that the top priority in modernizing the U.S. nuclear arsenal should be strengthening the resilience and survivability of C₃ networks. Elements of these vulnerable networks still use 1950s technology and are in desperate need of upgrades. Care must be taken to ensure that the president can order nuclear use reliably in response to enemy nuclear attack (positive control) and that such forces cannot be used without direct presidential authorization or through a series of accidents, C₃ disruption, or other circumstances (negative control). The risks of a failure of either type of control remain unnecessarily high due to the chronic neglect of C₃ networks and the strong operational inclination of current strategy toward preemptive strikes and prompt launch on warning. C₃ modernization strengthening the “connectivity” of the leadership and the far-flung nuclear forces is crucial to ensuring the credibility of a deterrence-only strategy that requires the ability to respond after absorbing a large-scale enemy strike. This is an immense but surmountable challenge.

Another major benefit of adopting this strategy is that it would afford the opportunity to scale down current plans for U.S. nuclear modernization. The United States could fully support the strategy with a monad composed of nuclear-powered ballistic-missile submarines (SSBNs). Five new submarines would suffice if, as would be certain in any real conflict, conventional and cyber forces were mixed with nuclear forces in programming attack assignments. This transition would also entail a reduction in U.S. deployed nuclear warheads from the current level of 2,000 on multiple different platforms to less than 700 warheads on the five SSBNs (see Table 1).

	Deterrence Only	Deterrence-Plus-Warfighting
Aimpoints	445	905
Total Sea-Based Force	5 Columbia-class submarines	7 Columbia-class submarines
Total Deployed Warheads	640	896
SSBNs at Sea	3 Columbia-class submarines	5 Columbia-class submarines
Warheads at Sea	384	640

Table 1: Active Forces Under Deterrence-Only and Deterrence-Plus-Warfighting Strategies. (Assumes U.S. conventional and cyber forces cover 30 percent of the aimpoints.) SSBNs at Sea: The remaining Columbia-class submarines (two in both the deterrence-plus-warfighting and deterrence-only strategy) would normally remain in port in peacetime and could be sent to sea during a crisis. Each SSBN at sea would carry 16 missiles with eight warheads each for a total of 128 warheads per SSBN.

Almost all of the existing forces and the rest of the new nuclear-weapon programs in the modernization pipeline—including seven additional new SSBNs beyond the five called for by this report, the existing 400 silo-based intercontinental-range missiles slated for

replacement, 100 new and 75 old heavy long-range bombers, and the tactical nuclear weapons delivered by dual-capable aircraft—would become superfluous and subject to cancellation.

A transition to a deterrence-only strategy would thus vastly reduce the scope of current modernization plans, promote building a more robust and reliable C₃ system to support post-attack operations, and allow substantial sums of money to be re-allocated to more pressing non-nuclear defense and security needs.

A deterrence-only strategy would replace the existing deterrence-plus-warfighting strategy which no longer fits the security environment and increasingly diverges from the security needs of the United States in the 21st century. The current U.S. nuclear posture is a vestige of the Cold War that reflects the following long-standing and anachronistic operational practices:

- methodically programmed massive nuclear-strike plans independent of any immediate circumstance;
- directed mainly against Russian and Chinese nuclear forces and their supporting launch and C₃ systems;
- continuously and immediately enabled by alert U.S. nuclear forces capable of covering primary targets in several categories—nuclear forces, war-sustaining industries, and leadership facilities; and
- technically configured and operationally inclined for rapid reaction in preemptive or launch-on-warning modes despite a commitment in theory and doctrine to second-strike retaliation only in response to enemy nuclear aggression.

A recent official review by the Trump administration reaffirmed these practices. By contrast, this study concludes a deterrence-only approach would provide greater stability and security at lower cost.

Although the target set of a deterrence-only strategy would largely overlap two of the three target categories (leadership and war-sustaining industries) in the existing U.S. strategy, it would exclude opposing nuclear forces. The U.S. nuclear posture, force structure, and planning would be de-coupled from the size of opposing nuclear forces and no longer geared to the immediate destruction of those forces. The existing warfighting posture, often referred to as a counterforce strategy, coupled to the additional traditional requirement to cover leadership and war-sustaining industrial targets, portends a magnitude of destruction far beyond any reasonable judgment of actual deterrent requirements. It also rationalizes maintenance of an arsenal far larger than needed for deterrence. And most importantly, because warfighting seeks the rapid destruction of opposing nuclear

forces, it places a premium on early first use and thereby encourages a rushed decision to initiate an attack. With “use or lose” forces operationally inclined toward preemption and launch on warning, warfighting also runs an inherent and unacceptably high risk of an inadvertent, accidental, or unauthorized triggering of the operational attack plans. These instabilities and risks are compounded by Russia’s equally strong inclination toward early and rapid employment of nuclear weapons during a confrontation.

If the United States continues to field its risky strategy of deterrence-plus-warfighting, against the advice of this report, the official U.S. nuclear modernization plan currently underway would still produce a vastly oversized and extravagantly expensive arsenal. U.S. planners are building an arsenal that is much larger than necessary to cover all the priority aimpoints in the current strategic war plan, including all known nuclear weapon deployments in Russia, China, and North Korea. The current modernization plan envisions the construction of 12 new SSBNs, when in reality seven to 10 would suffice to meet extant target objectives. No additional forces are needed even under today’s deterrence-plus-warfighting strategy and hence there is no reason to keep, let alone replace, the aging U.S. bomber and silo-based missile forces. Not only are these surplus forces expensive to maintain and replace, they also provide incentives and possible justification for potential U.S. adversaries to maintain unnecessarily large nuclear forces of their own, a self-perpetuating dynamic that fuels nuclear arms competition.

Under either the current or proposed strategy, the forward-deployed dual-capable aircraft assigned to deliver nonstrategic nuclear weapons (which, if used, would be considered strategic on the receiving end) should also be eliminated. Like the Minuteman III silo-based force, these aircraft are highly vulnerable and have negligible military utility. Also, no valid requirement exists to acquire new “low-yield” nuclear weapons. Many hundreds of “low-yield” weapons already exist in the U.S. stockpile, but they can be mostly eliminated and their assignments given to modern conventional weapons whose accuracy makes them as lethal as tactical nuclear weapons.

As noted above, plans to equip a new generation of stealthy, long-range strategic nuclear bombers could also be scrapped under either strategy. However, should military and intelligence planners obtain strong evidence to doubt the long-term invulnerability of America’s SSBN fleet due to anti-submarine-warfare threats or other “black swan” contingencies, then prudence dictates modernizing the bomber force and its weapons payloads as a nuclear reserve hedge force.

The cost of this insurance policy would be far lower than the cur-

rent bomber modernization program, however. While the official program envisions a fleet of 75 older B-52H and 100 brand new B-21A stealth bombers, a much smaller fleet would suffice. A fleet of only 40 bombers armed with 450 warheads is needed under a deterrence-only strategy, and only 70 bombers armed with 900 warheads under a deterrence-plus-warfighting strategy (see Table 2). Their payloads would consist of a mix of nuclear gravity bombs and cruise missiles. Additional conventional cruise missiles capable of destroying most types of enemy targets would be added to the mix. The bomber mission would probably remain viable without building and deploying a new standoff nuclear cruise missile (known as LRSO, for “long-range standoff”) carrying a modified version of the existing W80 warhead, but an analysis of alternatives is needed to define the optimal mix of payloads.

	Deterrence Only	Deterrence-Plus- Warfighting
Aimpoints	445	905
Air-Based Force	40 bombers	70 bombers
Reserve Warheads	450	900

As is the case today, the future strategic nuclear bomber force would remain off alert in peacetime unless and until the SSBN fleet encountered a critical threat to its effectiveness arising from new anti-submarine-warfare capabilities or from unexpected technical flaws in its propulsion reactor or other components. A plausible judgment that an enemy breakthrough in anti-submarine warfare might not be detected in time to take effective countervailing action might also justify alerting all or a portion of the hedge bomber force in peacetime. Depending upon the circumstances, this increase in readiness from reserve to full-alert status would be maintained until the SSBN issues were resolved.

This modernization road map would transform U.S. nuclear posture and save hundreds of billions of dollars over 30 years otherwise spent on force modernization, maintenance and operations, and warhead work by the Department of Energy’s nuclear facilities. These savings could finance increased investment in C3 modernization. The net savings after this reallocation could amount to tens of billions of dollars.

More importantly, a deterrence-only strategy would enable the United States to address the root source of existing nuclear danger: the large number of nuclear weapons around the world at risk of misuse. It would light the way toward reducing the role of nuclear

Table 2: Reserve Forces Under Deterrence-Only and Deterrence-Plus-Warfighting Strategies. The air-based force consists of B-52H, B-2A, and B21 Raiders equipped with gravity bombs and cruise missiles. The bomber force would be kept off alert in peacetime, with its nuclear warheads kept in central storage, except in an emergency that grounded some or all of the Columbia-class submarine fleet.

weapons, cutting their numbers and hastening their elimination. These are fundamentally legitimate and long-standing U.S. national security aspirations.

By contrast, the current strategy strives to enable nuclear warfighting and exploit any opportunity to gain the capacity to physically prevent Russian or Chinese nuclear attack on the home territory of the United States through preemptive offensive strikes, possibly in combination with missile defenses. This quest for “counterforce” superiority goes far beyond the stated purpose of deploying nuclear weapons for deterrence and embraces aims that today are not widely regarded as fundamentally legitimate goals for American military or security policy. It is also self-defeating as this anachronistic strategy only works to stimulate countervailing measures and arms racing by potential adversaries.

By adopting the alternative strategy of deterrence-only, the United States could dampen these warfighting dynamics and foster deep reductions or caps by other nuclear weapon countries. This would open up a credible pathway to the complete elimination of nuclear weapons.

To advance this goal of “global zero,” one of the key first steps is convincing Russia that matching the near-term U.S. cuts proposed by this report serves Russia’s own national security interest. This will not be easy but the goal is feasible if an effort is made to address the wider panoply of nuclear and conventional security concerns in the spirit of equal security for both sides. Although the goal is to reduce reciprocally and equally to 650 nuclear warheads apiece, the United States should not make its adoption of a deterrence-only strategy and the associated cuts to 650 weapons contingent upon negotiated cuts with Russia. A deterrence-only strategy is preferable to deterrence-plus-warfighting in part because it allows the United States to delink its forces from the size of the Russian arsenal. The size and composition of the U.S. arsenal should be keyed only to the intrinsic need to deter, and not to engaging opposing forces in nuclear warfighting.

If progress can be made toward shrinking the Russian nuclear arsenal to the U.S. level of roughly 650 total warheads, the stage would be set for deeper bilateral cuts and the imposition of constraints such as caps on the stockpiles of other nuclear-armed states. One important aim would be garnering a multilateral agreement among all the nuclear-armed states to reduce to or cap their arsenals at 300 weapons. If that goal can be reached, then the next and final stage would be negotiating a comprehensive multilateral agreement among all the nuclear-armed states setting the terms for complete elimination. These provisions would include a timetable and set of security

and verification conditions for implementing phased, proportional, and verifiable reductions culminating in total elimination.

In addition to phased bilateral and multilateral reductions in the size of nuclear stockpiles, a reasonable list of other intermediate measures on a credible path to complete elimination would include:

- adopting a policy of “no first use,” which categorically prohibits any initial use or threat of use of nuclear weapons for any purpose;
- de-alerting nuclear forces, which removes weapons from operational status to secure storage separated from delivery systems and placed under monitoring;
- creating an international monitoring program that, when fully evolved, would provide the basis for accurate accounting and reliable security of all weapons and weapon-usable materials (plutonium and highly enriched uranium) on a continuing basis while maintaining invulnerability to disarming attack; and
- ending all testing of nuclear devices, all production of weapon-usable fissile materials, and all fabrication of new weapons out of preexisting fissile-material stocks.

Because the United States and Russia possess the lion’s share of the world inventory of nuclear weapons, they have a particular obligation to be responsible stewards. This stewardship implies responsibility to refrain from threatening to use nuclear weapons first and avoid brinkmanship, and engage in serious discussions of the steps listed above as well as other steps that would reduce the risk of nuclear-weapon use and advance the cause of their eventual elimination. The United States and Russia should broaden their talks on strategic arms to consider all categories of nuclear weapons, including tactical weapons. Besides aiming to shrink the total arsenals, these talks should also address key operational matters such as the dangerous “hair-trigger” alert status of the two countries’ nuclear missiles and find ways to reduce the risks of misperception of each other’s military intentions, including the risks of a missile launch based on a false warning. Other key subjects for discussion include key non-nuclear strategic capabilities such as missile defenses and precision long-range conventional weapons. These strategic-stability talks should be open to discussion of any concerns that may increase the danger of nuclear escalation and conflict. It is hard to imagine a scenario where the United States and Russia can pursue deep reductions unless both sides are willing to engage and compromise with each other on military and political activities that are relevant to their national security concerns.

These stewards also bear responsibility for pursuing dialogue with the other nuclear-armed nations. Toward this end, they should convene a first-in-history multilateral nuclear-weapons summit to consider proposals from the five nuclear-armed members of the Nuclear Non-Proliferation Treaty (NPT), other nuclear-armed countries, and key non-nuclear-armed stakeholders on ways to reduce nuclear danger. These proposals should consider bold steps for advancing global strategic-arms control leading to the worldwide reduction and eventual elimination of nuclear weapons. The United States and Russia need to listen to third-party views on the incremental process needed to achieve greater security with fewer nuclear weapons in the world.

This summit should also seek the commitment of all nuclear-armed nations never to initiate the use of nuclear weapons. “No first use” is an idea whose time has come. Adopting this policy and, ideally, codifying it in a treaty or agreement prohibiting the first use of nuclear weapons would lend stability to crises and advance the cause of global nuclear disarmament.

Together with progress on nuclear arms control, it would also roundly affirm U.S. support for the NPT, an indispensable tool in staving off and rolling back proliferation. The United States must pay far more than lip service to its Article VI treaty obligation to pursue good-faith negotiations for nuclear disarmament if this fundamental agreement is to be preserved and strengthened. By following this road map, the United States would pay serious heed to the disarmament aspirations of the vast majority of the treaty’s 189 signatories and recapture global nonproliferation leadership. In return, the United States could expect the other signatories to support other key U.S. national security objectives, including preserving the NPT, keeping Iran from developing a nuclear weapon, pressuring North Korea to freeze and eventually dismantle its nuclear and ballistic-missile programs, preventing a new nuclear arms race, and reducing the risks of nuclear weapon use.