

# BACKGROUND

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## The Trump Nuclear Posture Review: Next Steps

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### Abstract

*The 2010 Nuclear Posture Review reflected President Obama's view that the United States should seek "the peace and security of a world without nuclear weapons." The notion that a world without nuclear weapons is possible, and safer than one with them, is a romanticized interpretation of international relations. In 2017, the Trump Administration has a unique opportunity to reassess some of the wrongheaded assumptions that guide the current U.S. nuclear weapons posture, modernize and strengthen U.S. nuclear deterrence, and contribute to building a consensus on the needs for a 21st-century nuclear arsenal.*

This year, the Trump Administration launched a comprehensive re-examination of U.S. nuclear weapons policy. The process, known as the Nuclear Posture Review (NPR), will result in a report to the President outlining steps to ensure that "the U.S. nuclear deterrent is safe, secure, effective, reliable and appropriately tailored to deter 21st-century threats and reassure our allies."<sup>1</sup> Every Administration since the end of the Cold War has undertaken similarly comprehensive reviews. The Trump NPR offers a unique opportunity to reassess and re-evaluate some of the wrongheaded assumptions that guide the current U.S. nuclear weapons posture, strengthen U.S. nuclear deterrence, and contribute to building a consensus on the needs for a 21st-century nuclear arsenal.

### Nuclear Posture Review 2010

The 2010 NPR, the most recent iteration of the process, reflected President Barack Obama's view that the United States should priori-

### KEY POINTS

- The notion that a world without nuclear weapons is possible, and safer than one with them, is a romanticized—and dangerous—view of international relations.
- The U.S. nuclear arsenal is aged. China, Russia, and North Korea are designing and developing new nuclear weapons.
- In its Nuclear Posture Review (NPR), the Trump Administration has a chance—and responsibility—to strengthen the country's nuclear weapons posture and deterrence.
- The NPR should do away with the Obama Administration's "three nos" policy in order to strengthen the credibility of the U.S. nuclear deterrent.
- New military requirements, particularly to reach deeply buried targets, have been identified in the past in an effort to tailor U.S. nuclear deterrence to 21st-century realities. The Trump Administration should support such efforts.

This paper, in its entirety, can be found at <http://report.heritage.org/bg3123>

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tize seeking “the peace and security of a world without nuclear weapons,” the view President Obama articulated in his 2009 Prague speech.<sup>2</sup> The notion that a world without nuclear weapons is possible, and safer than one with them, is a romanticized interpretation of international relations.

Since nuclear weapons were invented and used in combat in 1945, there has been no major great power conflict, and the number of casualties as a percentage of the population in conflicts has decreased by 80 percent.<sup>3</sup> Nuclear weapons will not disappear anytime soon, particularly as other nations appear to be increasing their reliance on them and their willingness to use them, making serious thinking about their role in U.S. national security ever more important. Actions of other nations in the nuclear realm should inform how the United States approaches its nuclear posture, and how it thinks about the potential of conflict and about damage-mitigation strategies, should conflict occur. The prevention of nuclear terrorism and proliferation is an important aspect of the U.S. policy agenda. But the priority of the U.S. nuclear posture must be to deter a large-scale attack against the United States and its allies.

The 2010 NPR advanced a series of problematic policies. The Obama Administration effectively ruled out using nuclear weapons in a response to biological and chemical weapon attacks when it declared that the United States “will not use or threaten to use nuclear weapons against non-nuclear weapons states that are party to the NPT [Non-proliferation Treaty] and in compliance with their nuclear non-proliferation obligations.”<sup>4</sup> The flaw in that logic is that these kinds of attacks can be just as devastating as those with nuclear weapons, and there is no in-kind U.S. deterrent capability. Biological and chemical attacks should not be exclud-

ed from nuclear deterrence, since excluding them potentially makes them a more attractive option for U.S. adversaries.

The 2010 NPR precluded options for developing new nuclear warheads.<sup>5</sup> Additionally, the Obama Administration said it would not support new military missions or provide for new military capabilities of the existing weapons. (These three prohibitions are also known as the “three nos” policy.) This approach is flawed. No other nuclear-armed nation observes such constraints. U.S. nuclear warheads were designed in then 1970s and 1980s during the Cold War with the Soviet Union as the enemy. Moreover, the number of U.S. nuclear weapons types and the diversity of their capabilities is vastly reduced since the Reagan era.

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## The notion that a world without nuclear weapons is possible, and safer than one with them, is a romanticized interpretation of international relations.

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The world today is significantly different. There are more nuclear powers today than during the Cold War. Many of these actors, including Russia and China, have active and extensive nuclear weapon modernization programs, including the production and testing of new warheads and exploring and exploiting new weapon effects. By precluding even a discussion about new nuclear weapons, the United States may be depriving itself of the best option to strengthen its nuclear deterrent. Building and designing new nuclear weapons would also help

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1. News release, “DOD Announces Commencement of the Nuclear Posture Review,” U.S. Department of Defense, Release No. NR-138-18, April 17, 2017, <https://www.defense.gov/News/News-Releases/News-Release-View/Article/1153992/dod-announces-commencement-of-the-nuclear-posture-review/> (accessed May 9, 2017).
  2. Robert Schroeder, “Text of President Obama’s Speech in Prague,” MarketWatch, April 5, 2009, [http://www.marketwatch.com/news/story/text-president-obamas-speech-prague/story.aspx?guid=%7B61A1EE9A%2DAA02%2D4876%2D8F9F%2D7E0A3797F54B%7D&dist=msr\\_2](http://www.marketwatch.com/news/story/text-president-obamas-speech-prague/story.aspx?guid=%7B61A1EE9A%2DAA02%2D4876%2D8F9F%2D7E0A3797F54B%7D&dist=msr_2) (accessed May 9, 2017).
  3. Richard W. Mies, “Strategic Deterrence in the 21st Century,” *Undersea Warfare*, No. 48 (Spring 2012), p. 17, [http://www.public.navy.mil/subfor/underseawarfaremagazine/Issues/PDF/USW\\_Spring\\_2012.pdf](http://www.public.navy.mil/subfor/underseawarfaremagazine/Issues/PDF/USW_Spring_2012.pdf) (accessed May 11, 2017).
  4. U.S. Department of Defense, *Nuclear Posture Review Report, April 2010*, April 2010, p. viii, [https://www.defense.gov/Portals/1/features/defenseReviews/NPR/2010\\_Nuclear\\_Posture\\_Review\\_Report.pdf](https://www.defense.gov/Portals/1/features/defenseReviews/NPR/2010_Nuclear_Posture_Review_Report.pdf) (accessed April 4, 2017).
  5. Baker Spring, “The Nuclear Posture Review’s Missing Objective: Defending the U.S. and Its Allies Against Strategic Attack,” Heritage Foundation *Backgrounder* No. 2400, April 14, 2010, <http://cf.heritage.org/research/reports/2010/04/nuclear-posture-review-missing-objective-defending-us-and-allies-against-strategic-attack>.

to improve U.S. understanding of other countries' efforts in this area as well as being able to counter new emerging capabilities. Such insights could be used to improve U.S. active and passive measures, including ballistic missile defense and civil defense programs.

Additionally, the United States already identified a new military requirement when the Bush Administration requested that Congress fund research for the Robust Nuclear Earth Penetrator (RNEP) warhead. The RNEP would have used an existing nuclear warhead and repackaged it to be better suited to reach deeply buried targets. The requirement was driven by advances in tunneling technologies and their use by U.S. adversaries to protect highly valued targets. The United States must be able to threaten these targets in order to strengthen deterrence and improve its credibility. The Obama nuclear policies will eliminate all U.S. capability against very deeply buried hardened facilities. The next NPR should not preclude any options just because they do not seem politically feasible. Leadership can change politics, particularly as evidence of dangerous national security developments mounts and surfaces into the public realm.

The 2010 NPR recognized that other nuclear weapon states, particularly China and Russia, have extensive nuclear weapon modernization programs and make qualitative and quantitative improvements to their nuclear weapons.<sup>6</sup> Since then, the Russian and Chinese nuclear programs have expanded. The United States must sustain a safe, secure, and effective nuclear arsenal especially in the light of these developments.

### **What the Trump Administration's NPR Should Do**

The next NPR should focus on implementing the principles of a "protect and defend" strategy.<sup>7</sup> At the heart of this approach is a recognition that the primary goal of the U.S. nuclear posture is to protect U.S. interests and its allies. It must move away from the

Cold War-era strategy of mutually assured destruction (MAD) and honor the sentiment expressed in the Senate's New Strategic Arms Reduction Treaty (New START) Resolution of Advice and Consent to Ratification. The resolution advised that "policies based on 'mutual assured destruction' or intentional vulnerability can be contrary to the safety and security of both countries, and the United States and the Russian Federation share a common interest in moving cooperatively as soon as possible away from a strategic relationship based on mutual assured destruction."<sup>8</sup>

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### **Russia, China, and North Korea are designing, developing, and testing nuclear weapons, and maintain vibrant nuclear weapon production complexes.**

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The "protect and defend" strategy is primarily a defensive strategy that requires a mix of offensive and defensive measures, and conventional and nuclear weapons. This approach takes into account a fundamental deterrence asymmetry between the United States and its adversaries. While the United States cares about its people and economic prosperity, potential adversaries (such as North Korea) care about means of internal oppression to keep the ruling regime in power, and means of external attack to extract concessions from other nations. It is much easier to destroy cities and economic targets than deeply buried bunkers and hardened military installations where the leadership and military targets of value might reside.<sup>9</sup> However, the credibility of such a policy is very low in light of current U.S. attitudes toward collateral damage and the obvious inconsistency of MAD with humanitarian international law. Additionally, the posture recognizes that an environment with multiple new nuclear powers is complex and potentially more unpredictable than what

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6. U.S. Department of Defense, *Nuclear Posture Review Report*, April 2010.

7. Baker Spring, "Toward an Alternative Strategic Security Posture," Heritage Foundation *WebMemo* No. 2183, January 2, 2009, <http://cf.heritage.org/research/reports/2009/01/toward-an-alternative-strategic-security-posture>.

8. "Treaty with Russia on Measures for Further Reduction and Limitation of Strategic Offensive Arms," U.S. Senate Consideration of New START Treaty, Resolution of Ratification, 111-5, <https://www.congress.gov/treaty-document/111th-congress/5/resolution-text> (accessed May 10, 2017).

9. Baker Spring, "Congressional Commission Should Recommend 'Damage Limitation' Strategy," Heritage Foundation *Backgrounder* No. 2172, August 14, 2008, <http://cf.heritage.org/research/reports/2008/08/congressional-commission-should-recommend-damage-limitation-strategy>.

the United States faced during the Cold War. Even in those days, however, the nation devoted significant resources to trying to figure out how to deter the Soviets, how to signal U.S. intentions, and how to assure allies all at the same time.

Essential components of the “protect and defend” strategy are active and passive defensive measures, including ballistic missile defense. Ballistic missiles remain a weapon of choice for U.S. adversaries due to their element of surprise (it takes only 33 minutes to target the U.S. homeland from parts of the world, and the time would be shorter the closer the launch location is), the relative difficulty of shooting down ballistic missiles, and the absence of defense against long-range ballistic missiles in much of the world. While the Ballistic Missile Defense Review deals with a ballistic missile defense strategy, the next NPR should recognize the stabilizing effect and national security benefits of pursuing a robust comprehensive and layered ballistic missile defense system.

### **Resilient Nuclear Infrastructure**

If all existing nuclear weapons in the world disappeared tomorrow, the United States would be at a distinct disadvantage to Russia and China in terms of its ability to design and produce nuclear weapons. Russia and China, as well as North Korea, are currently designing, developing, and testing nuclear weapons, and maintain vibrant nuclear weapon production complexes. They are building new warheads and are maintaining weapon designers’ and engineers’ skills. Russia can produce as many as 2,000 new nuclear warheads a year; the United States is currently at about 10; a number that is expected to increase only to between 60 and 80 in the foreseeable future.<sup>10</sup> Moreover, in the case of the U.S., these would be life-extended warheads, not ones made from new nuclear designs.

The United States is extending the lifespan of warheads designed in the 1970s for a world situation very different from today’s. The United States has actually eliminated all of the Cold War-era weapons that would be most useful for dealing with current threats. Indeed, some 95 percent of the Chinese

missile force is composed of missiles with ranges that are prohibited for the U.S. under the Intermediate-Range Nuclear Forces (INF) Treaty. The U.S. does not design or develop new warheads, which affects both manpower and infrastructure, the two most important components of a flexible and resilient nuclear weapons complex. It does not conduct yield-producing experiments on any of the existing warheads. It relies on computer codes (as well as other means) to certify that its warheads will work as expected. The National Nuclear Security Administration (NNSA) is archiving knowledge from those who actively participated in developing, testing, and producing nuclear weapons—and while these efforts are important, they are no substitute for hands-on experience.

An aged infrastructure presents an additional challenge to the nuclear weapons complex. Some of the buildings at Los Alamos National Laboratory date to the Manhattan Project. Infrastructure modernization is hampered by cost overruns, oversight problems, and a lack of predictable funding. The next NPR should recognize the importance of the nuclear infrastructure to the overall U.S. nuclear posture and its contributions to deterrence as well as other strategic goals.

### **Nuclear Weapons Testing**

The Trump Administration’s NPR should facilitate intellectual and policy freedom for scientists and engineers in the nuclear weapons complex to think through the benefits of nuclear yield-producing experiments for U.S. nuclear weapons and nuclear weapon modernization programs, with the intent to improving the Department of Energy’s understanding of aging effects on warheads in the current stockpile.<sup>11</sup> These experiments would not be on the scale of the atmospheric atomic explosion of the 1950s, nor would they necessarily have to be on the scale of the underground nuclear explosions of the 1960s, 1970s, and 1980s. Russia and China are today reportedly conducting very low-yield nuclear tests.

There are six reasons for which the United States might wish to resume nuclear weapons experiments: (1) to validate the reliability and effective-

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10. Robert G. Joseph, “Second to One,” *National Review*, October 17, 2011, <https://www.nationalreview.com/nrd/articles/296303/second-one> (accessed April 5, 2017).

11. Michaela Dodge and Baker Spring, “Keeping Nuclear Testing on the Table: A National Security Imperative,” Heritage Foundation *Backgrounder* No. 2770, February 27, 2013, <http://cf.heritage.org/research/reports/2013/02/keeping-nuclear-testing-on-the-table-a-national-security-imperative>.

ness of the existing stockpile; (2) to advance knowledge of nuclear weapons science and technology; (3) to design and test new nuclear weapons; (4) to validate the survivability of weapons and sensors; and (5) to increase understanding of nuclear weapons effects.<sup>12</sup> Additionally, (6), reinstatement of yield-producing experiments would help to introduce and recreate the skills that will be necessary should the United States find itself in a need of a nuclear test or yield-producing experiment in the future. These could also allow enhanced safety.

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## **The U.S. agreed to a nuclear-test moratorium between 1958 and 1961. In just three years, the skills needed to conduct a meaningful experiment had deteriorated, and lessons learned had to be painfully re-learned.**

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By resuming nuclear weapons tests, the assessment of the reliability of life-extended weapons could be less uncertain. The United States could validate computer codes that it currently uses to assess what is happening in the nuclear stockpile and increase the margins of certainty that nuclear warheads will perform as expected. Nuclear warheads are extremely complex devices consisting of thousands of different parts. Each of those parts must work with split-second precision. In the past, the scientists and engineers found that even different batches of the same material impacted warheads' performance. Nuclear weapon test results have often surprised designers.

The United States has never had an absolute certainty that its nuclear weapons will perform as

expected, as such a standard would be impossible to obtain. But as the nation departs from the existing warheads due to aging and service-life extensions, the concern margins of uncertainty may increase to the point of undermining U.S. deterrent capabilities. Computer codes are unlikely to be able to capture all complexities involved in these processes and might provide the expected result even if errors occur.<sup>13</sup>

The United States currently follows a policy of no yield-producing experiments, which the Clinton Administration established during the negotiations of the Comprehensive Test Ban Treaty (CTBT), which remains in place, despite being rejected by the Senate in 1999. At the time, the directors of the National Nuclear Laboratories were not in favor of a zero-yield interpretation (neither were the Russian or Chinese negotiators). The directors wanted to be able to conduct experiments well below one kiloton to ensure that a first stage of multiple-stage nuclear warheads operate successfully.<sup>14</sup> The Clinton Administration did not permit the directors to conduct a last series of experiments before the nuclear test ban went into an effect to validate computer codes currently in existence.<sup>15</sup>

Russia and China are reportedly conducting such experiments in order to improve their understanding of the nuclear stockpile, design new nuclear warhead designs, and maintain the production complex and the skill sets necessary to operate it.<sup>16</sup> With advancements in computational technologies, these experiments might benefit these countries more than could be imagined 20 years ago. The disparity between the U.S. approach that bans any yield-producing experiments and the approach of others that conduct them puts the United States at an "intolerable disadvantage."<sup>17</sup>

Russia and China are reportedly working on fourth-generation nuclear weapons, nuclear weap-

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12. Robert R. Monroe, "A Trump Revolution Is Needed for America's Nuclear Arsenal," *The Hill*, December 23, 2016, <http://thehill.com/blogs/pundits-blog/defense/311707-a-trump-revolution-is-needed-for-americas-nuclear-arsenal> (accessed April 5, 2017).
  13. David Sharp, "Nuclear Testing: Deterrence, Stewardship, and Arms Reduction," Theory, Simulations and Computation Directorate, Los Alamos National Laboratory, Los Alamos, NM, LA-UR-08-06803.
  14. C. Paul Robinson, John Foster, and Thomas Scheber, "The Comprehensive Test Ban Treaty: Questions and Challenges," Heritage Foundation Lecture No. 1218, November 7, 2012, <http://www.heritage.org/arms-control/report/the-comprehensive-test-ban-treaty-questions-and-challenges> (accessed April 5, 2017).
  15. *Ibid.*
  16. *America's Strategic Posture: The Final Report of the Congressional Commission on the Strategic Posture of the United States* (Washington, DC: U.S. Institute of Peace Press, 2009), p. 83, [http://www.usip.org/files/America's\\_Strategic\\_Posture\\_Auth\\_Ed.pdf](http://www.usip.org/files/America's_Strategic_Posture_Auth_Ed.pdf) (accessed May 10, 2017).
  17. Robinson, Foster, and Scheber, "The Comprehensive Test Ban Treaty: Questions and Challenges."
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ons in which certain nuclear effects are enhanced and others diminished, for example, nuclear weapons with enhanced radiation or electromagnetic-pulse effects.<sup>18</sup> According to General Paul Selva, Vice Chairman of the Joint Chiefs of Staff, Russia is “developing new nonstrategic nuclear weapons.”<sup>19</sup> It is very hard to harden the infrastructure, whether civilian or military, when one does not properly understand how these effects might impact current systems. Yield-producing experiments would help the U.S. better understand what kind of shielding and hardening its systems might need in order to remain survivable in the case of a nuclear attack. There are also countries, such as North Korea, India, and Pakistan, that have (recently, in the case of North Korea) conducted relatively large underground nuclear weapon tests.

History teaches that unless regularly exercised, skills to conduct a meaningful nuclear warhead experiment atrophy quickly. The United States agreed to a nuclear-test moratorium between 1958 and 1961. In just three years, the skills needed to conduct a meaningful experiment had deteriorated, and lessons learned had to be painfully re-learned. The United States conducted its last yield-producing nuclear weapon test in 1992. It seems likely that the nation would not be able to perform a meaningful nuclear weapons test even if it needed to, for instance, if an error in the stockpile were discovered that required an experiment to ensure that this error was corrected.<sup>20</sup> The concern does not have to do with the U.S. ability to detonate a nuclear weapon as much as it does with the U.S. ability to prepare the grounds, people, and necessary technical equipment to collect data from the test itself. There are fewer and fewer people in the United States who have hands-on experience with such equipment and its instrumentation. As with many hard skills, these can be only properly learned by doing.

U.S. experts with nuclear-testing experience are worried about “the steady degradation of U.S. nuclear test readiness” and question whether the Department of Energy has “any realistic appreciation for what nuclear testing involves or how to stay prepared to do it again within 24–36 months, as legally required by Presidential Decision Directive 15 (1993).”<sup>21</sup> The United States lacks specialized skills and equipment to conduct a meaningful nuclear weapons test. Even more seriously, it lacks the skills that would allow such a test to be conducted. Reconstitution of this important capability is not a viable option as the whole process would have to be reinvented.

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**There is no demonstrated link between the number of U.S. nuclear weapons and the number of nuclear-armed states. Countries have their own reasons for pursuing nuclear weapons.**

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It is impossible for the United States to sustain its stockpile without any yield-producing experiments indefinitely. The nation today is in a unique position and has an obligation to future generations of stockpile caretakers to harvest knowledge and skills of those with actual weapon test and design experience while it is still possible. Efforts to reinstitute the focus on the nuclear mission as well as the skill sets that such an endeavor require are essential for maintaining the credibility of the U.S. nuclear deterrent.<sup>22</sup>

### **Arms Control**

Arms control has played an important role in U.S. national security strategy. One of the underly-

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18. *America's Strategic Posture*, p. 83.

19. U.S. House Armed Services Committee, “Statement of General Paul Selva, USAF, Vice Chairman of the Joint Chiefs of Staff Before the 115th Congress, House Armed Services Committee, Military Assessment of Nuclear Weapons Requirements,” March 8, 2017, p. 4, <http://docs.house.gov/meetings/AS/AS00/20170308/105640/HHRG-115-AS00-Wstate-SelvaUSAFP-20170308.pdf> (accessed May 10, 2017).

20. Bill Gertz, “Los Alamos Expert: U.S. Unable to Conduct Nuclear Tests,” *Washington Free Beacon*, March 2, 2017, <http://freebeacon.com/national-security/los-alamos-expert-u-s-unable-conduct-nuclear-tests/> (accessed April 5, 2017).

21. John Hopkins, “Nuclear Test Readiness. What Is Needed? Why?” *National Security Science*, December 2016, [http://www.lanl.gov/discover/publications/national-security-science/2016-december/\\_assets/docs/NSS-dec2016\\_nuclear-test-readiness.pdf](http://www.lanl.gov/discover/publications/national-security-science/2016-december/_assets/docs/NSS-dec2016_nuclear-test-readiness.pdf) (accessed April 5, 2017).

22. Robert R. Monroe, “Defense Department Lacks Technical Expertise in Nuclear Weapons,” *The Hill*, July 29, 2016, <http://thehill.com/blogs/congress-blog/foreign-policy/289714-defense-department-lacks-technical-expertise-in-nuclear> (accessed April 5, 2017).

ing assumptions behind treating arms control as a normative good, including unilateral nuclear weapons reductions, is that if America leads by example, other countries will follow its lead and reduce their arsenals or forego developing their own nuclear capabilities. Such an assumption, however, is a flawed starting point for thinking about the role and purpose of arms control in U.S. national security strategy. There is no demonstrated link between the number of U.S. nuclear weapons and the number of nuclear-armed states. Countries have their own reasons for pursuing nuclear weapons, which might have very little to do with how many nuclear weapons the United States possesses. Russia and North Korea, for example, are hedging against U.S. conventional superiority so U.S. nuclear weapon reductions would do little to change their calculus on nuclear weapons.

The primary objective of arms control must always be to meet U.S. deterrence and military requirements in real-world scenarios. In July 2010, General Kevin Chilton argued that “the arsenal that we have is exactly what is needed today to provide the deterrent.”<sup>23</sup> Since that time, despite a dramatically worsening national security situation, which includes the Russian invasion of Ukraine, Russian violations of the INF Treaty, repeated North Korean nuclear and missile tests, and Chinese aggression in the South China Sea, the Obama Administration declared it desirable to reduce the number of U.S. nuclear weapons one-third below the level deemed necessary by General Chilton. Absent major positive geopolitical shifts, further nuclear weapon reductions are completely unwarranted.

The next NPR should support less-formalized nonproliferation and arms control measures, like the Proliferation Security Initiative designed to counter illicit trafficking of weapons of mass destruction, their delivery systems, and related materials.

The United States should not restrict itself to New START numbers, which were set in a more optimis-

tic national security environment than today. The Trump Administration should preserve its freedom of judgment when it comes to putting in place the most effective deterrent policies. It might find itself within New START limits, and it may not. Additionally, due to New START’s numerous flaws, the treaty should not be extended when it expires in 2021.<sup>24</sup> The groundwork for an extension would have to be put in place under the current Administration.

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## **U.S. nuclear weapons in Europe contribute to the cohesion of NATO.**

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The next NPR should focus on compliance with and enforcement of arms control agreements, with particular attention to the Russian violations of the INF Treaty. The NPR should recommend that the United States withdraw from the treaty, considering its obsolescence in today’s environment, as well as Moscow’s disregard for the treaty’s terms and deployments of banned systems.<sup>25</sup> Internationally, the NPR should also reject current efforts in the United Nations to ban nuclear weapons, since such a ban is fundamentally unenforceable, unrealistic, and ultimately could undermine U.S. allied relations and result in more proliferation as allies question U.S. commitment to their security.

### **Allied Relationships**

The United States currently extends deterrence to more than 30 allies around the world. American assurances contributed to convincing U.S. allies to forego their own nuclear weapon programs or develop and deploy fewer nuclear weapons than otherwise would be the case. While nuclear weapons are not the only component of extended deterrence, they play a critical role in U.S. efforts to assure allies, as the North Atlantic Treaty Organization (NATO) 2012 Deterrence and Defense Posture Review rec-

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23. General Kevin P. Chilton, “The New START Treaty (Treaty Doc. 111-5): Views from the Pentagon,” testimony before the Committee on Foreign Relations, U.S. Senate, 111th Cong., 2nd Sess., June 16, 2010, video, <http://www.foreign.senate.gov/hearings/the-new-start-treaty-treaty-doc-111-5-views-from-the-pentagon> (accessed March 28, 2017).

24. The New Start Working Group, “New START: Potemkin Village Verification,” Heritage Foundation *Backgrounder* No. 2428, June 24, 2010, <http://cf.heritage.org/research/reports/2010/06/new-start-potemkin-village-verification>.

25. Michaela Dodge, “Russian Intermediate-Range Nuclear Forces: What They Mean for the United States,” Heritage Foundation *Backgrounder* No. 3028, July 30, 2015, <http://cf.heritage.org/research/reports/2015/07/russian-intermediate-range-nuclear-forces-what-they-mean-for-the-united-states>.

ognized.<sup>26</sup> Nuclear weapons play a critical role in assuring allies who are directly confronted with a nuclear-armed potential adversary, such as South Korea and Japan.

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## Credibility in the eyes of the adversary is an essential component of effective deterrence.

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The next NPR should reaffirm U.S. commitment to its allies as well as to maintaining forward-deployed nuclear weapons in Europe. U.S. nuclear weapons in Europe contribute to the cohesion of the Alliance. This cohesion is being tested by Russia's aggressive actions as well as by its disinformation campaign within the NATO states.<sup>27</sup> Upholding the option to forward-deploy nuclear weapons is as important for U.S. allies Japan and South Korea as it is for Europe.

### U.S. Nuclear Weapon Modernization

The NPR should affirm the nation's commitment to modernize nuclear delivery systems and nuclear warheads. The U.S. nuclear triad is old. The first B-52 bombers were deployed in the 1950s, intercontinental-range ballistic missiles (ICBMs) in the 1970s, strategic submarines were commissioned in the 1980s, and B-2 bombers were first deployed in the latter half of the 1990s. These systems were designed in the context of the Cold War. Instead of modernizing them, the United States has been extending their service lives way beyond their original expiration dates. This has led to the current situation wherein the nation must now modernize all three legs of the nuclear triad in the next two decades.

To its credit, the Obama Administration started the difficult work of building a congressional consensus for providing funding for the new bomber, the ICBMs, the strategic submarine, as well as the

supporting infrastructure and systems in Europe. Nuclear weapons modernization is well worth the resources the U.S. is planning to spend on it. The Congressional Budget Office estimates that nuclear forces will cost about \$40 billion a year between 2017 and 2026.<sup>28</sup> This is in the context of an annual \$600 billion Department of Defense budget and a \$15 trillion economy. The Government Accountability Office found that the Centers for Medicare and Medicaid Services lost about \$60 billion to fraud, waste, abuse, and improper payments in 2014 alone.<sup>29</sup>

The number of nuclear warheads matters in some scenarios, but even more important is the *kind* of nuclear warheads. The current warheads are based on 1970s designs, and the newest ones were deployed almost 20 years ago when the Soviet Union was the primary focus of deterrence efforts and there were fewer nuclear weapon players. The world has changed significantly since then, both in terms of the number of nuclear weapon players as well as access to modern technologies, making building nuclear weapons relatively easier.

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## The current state of nuclear readiness is unsatisfactory, and people with hands-on experience in setting up instrumentation and measurements are retiring fast.

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The next NPR should reverse the policy precluding new nuclear weapons development. The most important goal of U.S. nuclear weapons policy is to prevent a large-scale attack against the United States or its allies. Credibility in the eyes of the adversary is an essential component of effective deterrence. Despite how terrible the prospect of waging a nuclear war, credibility requires thinking through the possible scenarios. The United States

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26. North Atlantic Treaty Organization, "Deterrence and Defence Posture Review," May 20, 2012, [http://www.nato.int/cps/en/natohq/official\\_texts\\_87597.htm](http://www.nato.int/cps/en/natohq/official_texts_87597.htm) (accessed April 5, 2017).

27. Michaela Dodge, "U.S. Nuclear Weapons in Europe: Critical for Transatlantic Security," Heritage Foundation *Backgrounder* No. 2875, February 18, 2014, <http://cf.heritage.org/research/reports/2014/02/us-nuclear-weapons-in-europe-critical-for-transatlantic-security>.

28. Congressional Budget Office, "Projected Costs of U.S. Nuclear Forces, 2017 to 2026," February 2017, <https://www.cbo.gov/sites/default/files/115th-congress-2017-2018/reports/52401-nuclearcosts.pdf> (accessed May 10, 2017).

29. Jim Avila, Serena Marshall, and Gitika Kaul, "Medicare Funds Totaling \$60 Billion Improperly Paid, Report Finds," ABC News, July 23, 2015, <http://abcnews.go.com/Politics/medicare-funds-totaling-60-billion-improperly-paid-report/story?id=32604330> (accessed May 10, 2017).

currently lacks credible deterrent options for certain scenarios, for example, for a very small-yield nuclear weapon attack against a military target, or a very small-yield nuclear weapon explosion intended to signal an adversary's resolve as the conflict unfolds. The goal is not to make nuclear weapons more "usable," the goal is to take every opportunity to prevent a nuclear war.

Additionally, one cannot disregard the possibility that nuclear weapons will be used in a conflict, perhaps not necessarily involving the United States. However unpleasant such a thought is, an unwillingness to consider it in a long-enough time frame represents wishful thinking rather than reality. Should a conflict involve the United States, it must be able to terminate the conflict on terms favorable to the United States and its allies. The key is to convince an adversary that he would not be able to achieve his objectives under any circumstance. The NPR should open up the intellectual space to examine new nuclear weapons options and whether these options can strengthen deterrence and advance U.S. national security. Such an examination does not undermine U.S. nonproliferation leadership. The United States has eliminated more than 90 percent of its nuclear arsenal since the end of the Cold War. Nuclear weapons possessing countries that are most likely to object to modernizing nuclear deterrence, such as Russia and China, are themselves developing new nuclear weapons and exploiting nuclear weapons with new effects.

### Important Steps for the United States

The Trump Administration should:

- **Implement the "protect and defend" strategy.** The next NPR should embrace a principle of "protect and defend," advancing both active and passive defense measures as well as a robust nuclear and conventional force. Such a posture is most appropriate considering the disparity between what the United States values and the targets it needs to credibly hold at risk to deter current and potential adversaries.
- **Provide intellectual space to examine whether U.S. national security would benefit from yield-producing experiments.** U.S. policy currently precludes all yield-producing experiments despite the unequivocal opinion of the directors of the National Nuclear Laboratories who deem them beneficial to ensure nuclear weapons work as intended during CTBT negotiations and despite other countries conducting such experiments.
- **Reassess the "three nos" policy.** The NPR should do away with the Obama Administration's "three nos" policy in order to strengthen the credibility of the U.S. nuclear deterrent. New military requirements, particularly to reach deeply buried targets, have been identified in the past in an effort to tailor U.S. nuclear deterrence to 21st-century realities. The Trump Administration should support such efforts.
- **Improve nuclear-test readiness.** The United States will likely find itself surprised by technical, geopolitical, or strategic developments that require it to conduct a nuclear weapon test. The current state of readiness is unsatisfactory, and people with hands-on experience in setting up instrumentation and measurements are retiring fast. The NPR should emphasize the need to preserve these skills and train future generations
- **Explain the need to modernize all elements of the the nuclear triad, long-range standoff capability, and tactical nuclear weapons and their delivery systems.** Explaining the contributions of these systems to national security is essential to sustaining the consensus on the need to modernize these systems in the future. The NPR should ensure the relevant actors understand the importance of this modernization program.
- **Reaffirm the U.S. commitment to extended deterrence and to forward-deployed nuclear weapons.** The United States must continue to assure its allies, many of whom are increasingly aggressive nuclear-armed states. Such assurances contribute to U.S. nonproliferation goals and help to maintain stability.
- **Recognize Russia as a potential adversary.** Despite Russia's 2008 invasion of Georgia, the Obama Administration decided to "reset" relations with Moscow and not consider it a threat. Such an assumption was wrong, particularly considering its aggressive behavior against U.S.

interests and nuclear threats against U.S. allies. The NPR must reinvent U.S. deterrent posture vis-à-vis Russia because the current status quo is untenable in the long term and highly dangerous to both the U.S. and its allies. In 2016, after the Russian invasion of Ukraine the Obama Administration finally recognized Russia as a threat but did nothing to further enhance the U.S. nuclear deterrent.

- **Let the New START expire.** New START remains a bad deal for the United States. The Administration should let the treaty expire, improve the U.S. negotiating position, and negotiate the next agreement from a position of strength so that a new agreement is more aligned with U.S. strategic interests.
- **Withdraw from the INF Treaty.** The INF Treaty has outlived its political and strategic utility and the United States is currently the only party to the treaty that takes its obligations seriously.<sup>30</sup>
- **Announce that the United States has no intention of ratifying the CTBT.** Such an announcement would honor the Senate's integrity given that it rejected this treaty already. It would also relieve the U.S. of the obligation not to take actions contrary to the object and purpose of the treaty.
- **Emphasize the importance of archival efforts.** The NPR must direct the Department of Defense and the NNSA to continue to expand archival efforts with respect to U.S. nuclear weapons designs and test readiness while recognizing that some of the skills required can be only learned by trial and error.

- **Produce an unclassified version of the NPR.** An unclassified version of the NPR would help to prevent misunderstanding stemming from selective leaks that plagued some of the previous iterations of the document. It would also contribute to building a consensus on the need for nuclear weapons modernization and adjusting U.S. nuclear weapons policies to match 21st-century realities.

The next NPR presents a unique opportunity to examine flawed or no-longer-valid assumptions of the Obama Administration. The Trump Administration should and can put U.S. nuclear weapons policy on a sounder footing, thereby advancing U.S. national security, strengthening deterrence vis-à-vis nuclear-armed states, and assuring allies around the world. Additionally, the Administration can set the stage for the intellectual and material revitalization of the U.S. nuclear weapons complex that is currently lagging behind its main peer competitors.

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30. Michaela Dodge, "Time to Withdraw from the Intermediate-Range Nuclear Forces Treaty," Heritage Foundation *Issue Brief* No. 4675, March 29, 2017, <http://www.heritage.org/missile-defense/report/time-withdraw-the-intermediate-range-nuclear-forces-treaty>.