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No-First Use of Nuclear Weapons: A Policy Assessment

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Executive Summary

The National Defense Authorization Act (NDAA) for Fiscal Year 2020 (FY20) calls for a study on "the United States adopting a policy to not use nuclear weapons first." In simplest terms, no-first use (NFU) is a policy pronouncement whereby a nuclear power pledges not to employ nuclear weapons except in response to an adversary's nuclear attack. Adopting an NFU policy would aim to reduce the long-standing level of strategic ambiguity in U.S. declaratory policy regarding when nuclear weapons might be used and will not be used.

In response to the Congressional requirement, and pursuant to an agreement with the Office of the Secretary of Defense (OSD), the Institute for Defense Analyses (IDA) performed analysis of unclassified and classified documentation provided by OSD, U.S. Strategic Command (USSTRATCOM), and the Intelligence Community to develop a baseline understanding of current policy and practice, including reviews of NFU conducted during previous administrations. Approximately twenty semi-structured interviews were conducted with government and non-government subject matter experts (SMEs) on allied and adversary perspectives. The following summary assessment is derived from the IDA team's research, extensive consultation with SMEs, classified methodologies, and subsequent synthesis.

IDA concludes that U.S. adoption of an NFU policy will not bring about a setting that is more conducive to positive behavior by adversaries or to strengthened relations with allies. In light of already-constrained U.S. policy and procedure governing nuclear use, the weight of the evidence indicates *significant potential for NFU to impart more harm than good*. This assessment is based on IDA's evaluation of the criteria highlighted by the NDAA, to include

How an NFU Policy May Affect U.S. Force Posture

- Declaratory policy and force posture—intent and capability—are separate matters. U.S. adoption of an NFU policy would not require any change to U.S. nuclear force posture or force requirements. U.S. forces are postured such that abstaining from nuclear use is always an option.
- Whether NFU adoption would allow changes to the nuclear force depends on the overall strategic setting and on adversary capability and intent. While adjustments to the conventional force posture could be considered to bolster allied/partner confidence in the U.S. commitment to extended deterrence, any calculation of costs or savings associated with hypothetical changes to the force would be speculative.

How an NFU Policy May affect the Views of U.S. Allies

- IDA found consistently that allies place high value on their relationship with the United States and consider the U.S. security guarantee critical. Allies see a need for strengthened bonds with the United States and suggest a number of mechanisms to do so, none of which relate to declaratory policy.
- For those states that are most linked to U.S. nuclear security assurances and most concerned about Russian and Chinese aggression, a shift to NFU can be expected to increase anxieties, dilute assurance, and potentially drive the need for the United States to offer material compensation.
- North Atlantic Treaty Organization (NATO) members perceive a troubling gap in regional deterrent capabilities vis-à-vis Russia that an NFU policy might exacerbate.
- Without a nuclear-sharing arrangement or permanent regional presence, the current U.S. extended nuclear deterrence commitment in the Asia-Pacific is likely seen as little more than a possibility. NFU would dilute that promised commitment even further.

How an NFU Policy May Affect the Views of U.S. Adversaries and the Risk of Miscalculation

- A policy pronouncement of NFU is unlikely to alter how Moscow or Beijing perceive that the United States will approach a crisis. Even if NFU was attended by a downgrade in the overall readiness of U.S. nuclear forces, Russia and China will probably doubt that U.S. intent and objectives have changed.
- The available evidence indicates that Russia and China will not view such a shift in U.S. policy as credible and that they will seek to leverage the move to gain diplomatic capital and undermine alliances.
- Russia and China do not predominantly fear an all-out U.S. nuclear strike. Moreover, a U.S. NFU policy could provide room for regional adventurism and aggression, and concomitantly increase the worry of allies already anxious about a U.S. shift in policy.
- Given no likely change in adversary behavior in a positive direction and an increase in uncertainty of U.S. security assurances by allies, IDA's research indicates that the risk of miscalculation in crisis will not be lowered by U.S. adoption of an NFU policy. Fundamentally, many factors affect potential miscalculation in crisis, but declaratory policy is not one of them.

How an NFU Policy May Affect Nuclear Nonproliferation

- Historical evidence does not support the likelihood of a change in the proliferation and non-proliferation stances of other states as a direct result of a change to U.S. policy or behavior.
- Although an NFU pledge may open avenues to strengthen the U.S. position in the current nuclear non-proliferation regime, the ultimate overall effect on non-proliferation across the globe is uncertain at best and fleeting at worst.

Contents

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1. Introduction

As a matter of national policy for over fifty years, the United States has maintained calculated ambiguity as to the specific conditions under which it would employ nuclear weapons. Strategic ambiguity has been upheld alongside acknowledgment of the extraordinary nature of these weapons and the extreme conditions that would warrant their use. This declaratory policy has persisted through executive and legislative branches of government led by a variety of leaders who represent a wide spectrum of political philosophy and governing styles. By virtue of historical continuity alone, calculated ambiguity appears to possess a fundamental quality.

In the National Defense Authorization Act (NDAA) for Fiscal Year 2020 (FY20), Congress sought to examine a potential shift of U.S. declaratory policy regarding nuclear weapons employment, from a policy of strategic ambiguity to a policy of no-first use (NFU).[1] In simplest terms, by pronouncing NFU, a nuclear power pledges not to employ nuclear weapons except in response to an adversary's nuclear attack. Specifically, Section 1673 of the Act mandates that

> [T]he Secretary of Defense shall seek to enter into a contract with a federally funded research and development center to conduct a study on the United States adopting a policy to not use nuclear weapons first …. Not later than 240 days after the date of the enactment of this Act, the federally funded research and development center shall submit to the Secretary the study …. The study …shall be submitted … in unclassified form, but may include a classified annex.[2]

This tasking builds on a debate that is at once storied and protracted. The entire time that the policy of strategic ambiguity has been affirmed and sustained, it has also been questioned and contested for a variety of reasons. The extraordinarily destructive nature of nuclear weapons has caused some to call for a publicly declared commitment to never to be the first to initiate their use. Others have added that an NFU pronouncement would lead to favorable behavior on the part of other nuclear-armed states and also to lowered risk of nuclear use. Proponents of an ambiguous declaratory policy have long countered with the

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1 For the remainder of this paper, unless otherwise stated, "declaratory policy" will refer to U.S. declaratory policy regarding the potential employment of nuclear weapons. Similarly, "employment" or "use" will refer to the employment or use of nuclear weapons.

2 National Defense Authorization Act for Fiscal Year 2020, Pub. L. No: 116-92, 133 Stat. 198, 116th Cong. (2019), 133 Stat. 1776–1777, https://www.congress.gov/116/plaws/publ92/PLAW-116publ92.pdf. The full text of the legislative requirement can be found in Appendix A.

deterrence and assurance benefits that appear to derive from such a stance. Previous coverages of this issue are many, with varying degrees of depth. However, despite at least six official reviews over the past twenty-five years,[3] the debate surrounding declaratory policy endures, typically polarized and lacking robust evidence.

In addition, it is important to note that the FY20 NDAA requirement is expansive. In light of limitations imposed by COVID-19, the timeline and resources, the Institute for Defense Analyses (IDA), in coordination with its sponsor, the Office of the Secretary of Defense for Policy, set out to address all matters stipulated by the NDAA in an analytic effort to take stock and enhance the body of evidence that should inform such an important conversation and debate. Although this paper is not a study of the debate per se, where applicable, the sides of the NFU debate are presented, followed by the results of IDA's research in narrative form.

The findings presented here are premised on and informed by many sources. The IDA team[4] performed an extensive literature review of unclassified and classified documentation provided by the Office of the Secretary of Defense, U.S. Strategic Command, and the Intelligence Community, to develop a baseline understanding of current policy and practice, including reviews of NFU conducted during previous administrations. The team also reviewed existing analyses and open-source publications and consulted with experts familiar with those analyses, to establish and address the key aspects of the NFU public debate. Approximately twenty semi-structured interviews were conducted with government and

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[3] The following reviews purportedly or explicitly decided to retain or recommend adherence to a declaratory policy of strategic ambiguity after at least formally considering NFU: the 1994 Nuclear Posture Review (NPR), the 2001 NPR, the 2009 Strategic Posture Commission, 2010 NPR, an internal review in 2016, and the 2018 NPR. For a detailed tracing of U.S. policy regarding nuclear use during the past decade, see Appendix B and Brad Roberts, "Debating Nuclear No-First-Use, Again," *Survival* 61, no. 3 (2019): 39–56, https://doi.org/10.1080/00396338.2019.1614788.

[4] The core IDA study team was Major General (retired) William A. Chambers, Dr. Caroline Milne, Dr. Rhiannon Hutton, and Dr. Heather Williams (IDA consultant). The study also benefited from the contributions of Mr. David Stein, Dr. James Blackwell, Ms. Rachel Dubin, Mr. John K. Warden, and Admiral (retired) John C. Harvey, Jr.

non-government subject matter experts (SMEs) on allied, partner, and adversary perspectives.[5] Concluding observations are derived from the IDA team's research, extensive consultation with SMEs, classified methodologies, and subsequent synthesis and were subject to the internal IDA peer review process.[6]

Consistent with the requirement of the NDAA, this paper presents the research findings in unclassified form, supported by a classified annex. While unclassified sources cannot fully elaborate the issues specified by the legislation, they can address the key research objectives. An open-source paper has the added benefit of contributing to a broader, more transparent debate on this important issue.

The remainder of the paper is organized as follows:[7]

- Chapter 2 assesses which foreign countries have stated or adopted NFU policies, including the credibility of such policies and how they affect planning and operations.
- Chapter 3 elaborates and clarifies current U.S. declaratory policy regarding nuclear weapons employment.
- Chapter 4 assesses the potential changes in force posture and force requirements and costs or saving that an NFU policy would require or allow.
- Chapter 5 assesses the views of U.S. allies regarding the U.S. adoption of an NFU policy, including whether, and if so how, any concerns regarding such a policy could be mitigated, including the value of engaging such allies to offer credible extended deterrence assurances.
- Chapter 6 assesses how adversaries of the United States might view a declaration of NFU, as well as the impact of an NFU policy on the risk of miscalculation in a crisis.
- Chapter 7 assesses the benefits and risks of such a policy regarding nuclear nonproliferation.
- Chapter 8 offers concluding observations.

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5 These interviews were conducted on a not-for-attribution basis to encourage candid responses. The expert community that was consulted included government and non-governmental perspectives on policy, operational, and strategic deterrence issues from Australia, Estonia, France, Japan, the North Atlantic Treaty Organization (NATO), the Netherlands, Poland, South Korea, Sweden, and the United Kingdom. Members of the study team also participated in a virtual workshop, hosted by King's College London, that centered on European perspectives on deterrence. Other methods used to assess impact on adversaries are described in a classified annex.

6 The review panel included General (retired) Larry D. Welch, Ambassador Linton Brooks, and Dr. John R. Harvey.

7 This structure maps to the matters specified by FY20 NDAA Section 1673, reproduced in Appendix A, as follows: Chapter 2 addresses matter 3; Chapter 4 addresses matter 6; Chapter 5 addresses matter 2; Chapter 6 addresses matters 1 and 4; and Chapter 7 addresses matter 5.

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2. The NFU Empirical Record

Other NFU policies have not been taken at face value

If the United States were to adopt an NFU policy, it would join two other countries—China and India—in such a commitment.[8] The Soviet Union's maintenance of an NFU policy during the final years of the Cold War comprises another, albeit no longer current, case. As the merits of a potential change to U.S. declaratory policy are weighed against the drawbacks, this empirical record may offer useful lessons about the extent to which NFU would be interpreted as a reliable indicator of the conditions under which U.S. leadership might actually employ nuclear weapons.

In summary, not once has a nuclear state's NFU pledge ever been taken at face value, especially by its adversaries. All these pledges have generated intense debate among international security experts and government policy and operational leaders about the constraining function such policy statements would provide under the extreme conditions that could warrant nuclear use. Given ongoing developments in Chinese and Indian nuclear forces, the scrutiny is likely to continue and even intensify. Still, however intangible the effects, adopting and upholding NFU policies are repeatedly cited as factors that could drive down the risk of nuclear use, be it inadvertent or deliberate.

A. China

China most closely resembles a paradigm of NFU. For over fifty years—by far the longest of any nuclear-armed state—a commitment to "never use nuclear weapons first at

[8] North Korea may also adhere to an NFU policy. At the 7th Workers' Party Congress in May 2016, Kim Jong Un pledged that North Korea "will not use its nuclear weapons first unless aggressive hostile forces use nuclear weapons to invade on our sovereignty." This statement prompted some discussion of North Korean intent (see Eric Talmadge, "North Korea Will Not Use Its Nuclear Weapons First, Kim Jong-Un Tells Congress," *Independent*, May 8, 2016, https://www.independent.co.uk/news/world/asia/north-korea-will-not-use-it-s-nuclear-weapons-first-kim-jong-un-tells-congress-a7018906.html and "Is Pyongyang's No-First-Use Pledge New Stance?," *People's Daily*, May 9, 2016. Given that details of the state's nuclear posture continue to remain sparse and/or difficult to verify, this paper does not speak to the possible implementation and credibility of a North Korean NFU policy.

any time nor under any circumstances" has served as a fundamental principle of Chinese nuclear policy.[9]

At first glance, strict adherence to this pledge in a future crisis or conflict seems plausible, though China's emphasis on opacity complicates any conjecture regarding its nuclear capabilities and intentions. Official statements regarding NFU have long been consistent, with remarks and publications repeatedly affirming the commitment as a governing principle.[10] Doctrinal corroboration is provided by the general thrust of a key piece of primary evidence, the 2004 *Science of Second Artillery Campaigns (SSAC)*.[11] Regarding posture, Beijing's construction of nuclear forces that, to date, are largely incapable of mounting strikes quickly strengthens the perception that they may not be used first.[12] Central to this thesis is the largely de-mated missile force that underwrites China's capability to inflict significant damage against the United States and its allies. Under peacetime or normal conditions, warheads and their delivery platforms are predominantly housed in separate locations, to be brought together only when needed.[13] Though this physical firebreak is harder

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9 China's NFU policy is also premised on a second unconditional pledge to not "[threaten] to use nuclear weapons against non-nuclear-weapon states or nuclear-weapon-free zones unconditionally." (see State Council Information Office, *China's National Defense in the New Era*, Defense White Paper (Beijing: The State Council Information Office of the People's Republic of China, July 2019), http://www.xinhuanet.com/english/2019-07/24/c_138253389.htm.

10 Optimists about the reliability of Chinese policy tend to cite these affirmations as evidence of the pledge's credibility (see Gregory Kulacki, "Would China Use Nuclear Weapons First in a War With the United States?" *The Diplomat*, April 27, 2020, https://thediplomat.com/2020/04/would-china-use-nuclear-weapons-first-in-a-war-with-the-united-states/.

11 Fiona S. Cunningham and M. Taylor Fravel, "Assuring Assured Retaliation: China's Nuclear Posture and U.S.-China Strategic Stability," *International Security* 40, no. 2 (Fall 2015):13, https://www.mitpressjournals.org/doi/pdf/10.1162/ISEC_a_00215; Michael S. Chase, "China's Transition to a More Credible Nuclear Deterrent: Implications and Challenges for the United States," *Asia Policy*, 16 (July 2013), 78, https://muse.jhu.edu/article/514844/pdf; Thomas J. Christensen, "The Meaning of the Nuclear Evolution: China's Strategic Modernization and US-China Security Relations," *Journal of Strategic Studies* 35, no. 4 (August 2012): 475, https://www.tandfonline.com/doi/pdf/10.1080/01402390.2012.714710.

12 Hans M. Kristensen and Matt Korda, "Chinese Nuclear Forces, 2020," *Bulletin of the Atomic Scientists* 76, no. 6 (2020): 446, https://doi.org/10.1080/00963402.2020.1846432; Jeffrey Lewis, *Paper Tigers: China's Nuclear Posture*, Adelphi Book 446 (London, UK: The International Institute for Strategic Studies, 2014), 112–121, https://www.tandfonline.com/toc/tadl20/54/446; M. Taylor Fravel and Evan S. Medeiros, "China's Search for Assured Retaliation: The Evolution of Chinese Nuclear Strategy and Force Structure," *International Security* 35, no. 2 (Fall 2010): 53–57, https://www.mitpressjournals.org/doi/pdf/10.1162/ISEC_a_00016.

13 Department of Defense, *Military and Security Developments Involving the People's Republic of China* (Washington, DC: Office of the Secretary of Defense (OSD), September 2020), 88, https://media.defense.gov/2020/Sep/01/2002488689/-1/-1/1/2020-DOD-CHINA-MILITARY-POWER-REPORT-FINAL.PDF; Kristensen and Korda, "Chinese Nuclear Forces, 2020," 446; Mark A. Stokes, *China's Nuclear Warhead Storage and Handling System* (Arlington, VA: Project 2049 Institute, March 12, 2010), https://project2049.net/wp-content/uploads/2018/05/chinas_nuclear_warhead_storage_and_handling_system.pdf.

to replicate in sea-based forces, China's relatively new ballistic missile submarine (SSBN) force is considered operational but not is continuously at sea on armed patrols.[14] According to recent scholarship, Chinese experts believe the nuclear and conventional array of forces they have fielded is sufficient to ensure crisis stability.[15]

At the same time, questions about the sincerity of the Chinese policy persist. Analysts and officials continue to highlight the risk that a conventional attack on China's nuclear forces (including their command and control) could cause Beijing to use nuclear weapons first.[16] Such claims are anchored in specific paragraphs from authoritative publications like the SSAC and a "large body of unofficial statements" that describe circumstances in which China could conceivably drop the constraint altogether.[17] Moreover, the steady modernization and expansion of the People's Liberation Army's (PLA) nuclear capabilities has slowly weakened the material and operational basis for China's NFU policy. While observers emphasize that these improvements could be aimed purely at enhancing the survivability of Chinese nuclear forces, increasing evidence of a shift toward a launch on warning (LOW) posture and "high alert duty" rotations for nuclear and conventional missile brigades merits careful watching.[18]

Senior U.S. officials tend to view these trends with skepticism, according to public remarks. For example, Dr. Rob Soofer, Deputy Assistant Secretary of Defense for Nuclear and Missile Defense, pointedly concluded, "I don't believe China when they say they have a no first use policy."[19] ADM Charles Richard, the Commander of U.S. Strategic

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[14] Department of Defense, *Military and Security Developments*, 45; Kulacki, "Would China Use Nuclear Weapons." It is not clear whether China plans to adopt a continuous-at-sea posture, support of which the Office of Naval Intelligence estimates would require at least five Chinese boats. OSD reports the operational fleet totals four boats (see Office of Naval Intelligence, *The PLA Navy: New Capabilities and Missions for the 21st Century* (Washington, DC: Department of Defense, 2015), 17, https://fas.org/nuke/guide/china/plan-2015.pdf).

[15] Fiona S. Cunningham and M. Taylor Fravel, "Dangerous Confidence? Chinese Views on Nuclear Escalation," *International Security* 44, no. 2 (Fall 2019): 61–109, https://muse.jhu.edu/article/738694/pdf.

[16] Franklin C. Miller, "Sole Purpose: A Policy Without A Purpose," *Real Clear Defense*, September 19, 2020, https://www.realcleardefense.com/2020/09/19/sole_purpose_a_policy_without_a_purpose_578000.html; Caitlin Talmadge, "Would China Go Nuclear? Assessing the Risk of Chinese Nuclear Escalation in a Conventional War with the United States," *International Security* 41, no. 4 (Spring 2017): 50–92, https://www.mitpressjournals.org/doi/pdfplus/10.1162/ISEC_a_00274.

[17] Christensen, "The Meaning of the Nuclear Evolution," 474–481; Michael S. Chase, "Chinese Views on the 2018 Nuclear Posture Review, and Their Implications," *China Brief* 18, no. 4 (March 12, 2018), https://jamestown.org/program/chinese-views-on-2018-npr/.

[18] Department of Defense, *Military and Security Developments*, 88–90.

[19] "DASD for Nuclear and Missile Defense Policy Delivers Remarks at the Mitchell Institute Nuclear Deterrence Forum Series," Department of Defense, September 2, 2020, https://www.defense.gov/Newsroom/Transcripts/Transcript/Article/2337753/dasd-for-nuclear-and-missile-defense-policy-delivers-remarks-at-the-mitchell-in/.

Command (CDRUSSTRATCOM), also recently expressed doubts, "China … is developing a stack of capabilities that, to my mind, (are) increasingly inconsistent with a stated no-first-use policy."[20] Research and interviews conducted for this project suggest such reservations are shared by Indian and European officials and strategists and experts in the Asia-Pacific and extends into the Chinese strategic analytical community.[21]

B. India

Similar to the Chinese case, NFU has been central to Indian nuclear strategy since India's first nuclear test, and New Delhi has reinforced that policy through an arsenal of low readiness—storing nuclear delivery platforms separately from warheads. A further likeness between these two examples can be found in purported developments within Indian nuclear forces that call faithfulness to an NFU policy into question. In this instance, the inconsistency centers on the possibility that India may have "canisterised" or "pre-mated" some Agni-V missiles with warheads.[22]

In comparing the Indian and Chinese cases of NFU, at least two differences stand out, both of which suggest India's policy may be less constraining and thereby less credible. The first contrast is contained within the policies themselves. Unlike China's unconditional pledge, the Indian policy permits the use of nuclear weapons in response to a chemical or biological attack. This condition, which formally revised the scope of the policy five years after it was adopted, is often viewed to have weakened India's commitment to NFU.[23] The second distinguishing feature of the Indian policy vis-à-vis China's NFU pledge is its

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[20] "Adm. Richard Discusses USSTRATCOM Operations With Reporters," Department of Defense, September 14, 2020, https://www.defense.gov/Newsroom/Transcripts/Transcript/Article/2347223/adm-richard-discusses-usstratcom-operations-with-reporters/. See also U.S. Senate, *Hearing to Receive Testimony on United States Northern Command and United States Strategic Command in Review of the Defense Authorization Request for Fiscal Year 2021 and the Future Years Defense Program*, statement of Charles A. Richard, Commander United States Strategic Command (Washington, DC: U.S. Congress, February 13, 2020), https://www.armed-services.senate.gov/imo/media/doc/20-04_02-13-2020.pdf.

[21] Kumar Sundaram and M. V. Ramana, "India and the Policy of No First Use of Nuclear Weapons," *Journal for Peace and Nuclear Disarmament* 1, no. 1 (2018): 164, https://doi.org/10.1080/25751654.2018.1438737; Ankit Panda, "India's Rethink on 'No First Use' Nuclear Policy Won't Surprise China or Pakistan," *South China Morning Post*, August 25, 2019; Nan Li, "China's Evolving Nuclear Strategy: Will China Drop "No First Use?" *China Brief* 18, no. 1 (January 17, 2018), https://jamestown.org/program/chinas-evolving-nuclear-strategy-will-china-drop-no-first-use/.

[22] Sundaram and Ramana, "India and the Policy of No First Use," 165. For a current overview of Indian nuclear forces, see Hans M. Kristensen and Matt Korda, "Indian Nuclear Forces, 2020," *Bulletin of the Atomic Scientists* 76, no. 4 (2020): 217–225, https://doi.org/10.1080/00963402.2020.1778378.

[23] For example, see Julia Masterson, "India Considers No-First-Use Changes," *Arms Control Today* 49, no. 8 (October 2019), https://www.armscontrol.org/act/2019-10/news-briefs/india-considers-first-use-changes.

long-contested nature in the public domain, having taken "regular fire from Indian strategists and retired military officers" throughout its lifetime.[24] In the past few years, senior levels of government have equivocated, including India's Defence Minister last year.[25] Although Indian experts and officials have been quick to dismiss these comments as not reflecting actual policy, long-standing Chinese and Pakistani skepticism will likely endure.[26]

C. Soviet Union

The single historical instance of NFU is significant for the debate over a possible change to U.S. declaratory policy for at least one critical reason. The Soviet Union is the only country to have adopted such a policy *after* developing and deploying a large, diverse nuclear arsenal. The NFU-driven benefits and drawbacks encountered by the Soviet Union are thus ostensibly more analogous for the United States than the implications of the Chinese or Indian examples. Skeptics of the pledge's authenticity point out that the Soviet military continued to publish writings on nuclear preemption and maintain plans "for a European war that called for substantial use of nuclear weapons from the outset of hostilities."[27] A prominent Sovietologist's retrospective view is telling: "No one there or here ever had a 'no first use' policy. Only very naive people ever believed that. It doesn't mean any change in operations, in readiness, in technology, targeting."[28]

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[24] Toby Dalton, "Much Ado About India's No-First-Use Nuke Policy," *India Global Business*, September 26, 2019, https://indiaincgroup.com/much-ado-about-indias-no-first-use-nuke-policy/; Sundaram and Ramana, "India and the Policy of No First Use."

[25] Web Desk, "No First Use Nuclear Policy May Change in Future, Says Rajnath Singh on India's Defence Strategy," *India Today*, August 16, 2019, https://www.indiatoday.in/india/story/india-no-first-use-nuclear-policy-may-change-rajnath-singh-1581403-2019-08-16; Christopher Clary and Vipin Narang, "'No First Use' Nuke Policy Isn't Dead, but Losing Sanctity," *Hindustan Times*, August 18, 2019, https://www.hindustantimes.com/analysis/no-first-use-isn-t-dead-but-it-s-now-meaningless/story-Hyq9Uo78OmqpLqN7iP1zEJ.html; Ramesh Thakur, "Is India still Committed To Its No-First-Use Nuclear Policy?" *The Strategist* (blog), *Australian Strategic Policy Institute*, November 11, 2019, https://www.aspistrategist.org.au/is-india-still-committed-to-its-no-first-use-nuclear-policy/; Christopher Clary and Vipin Narang, "India's Counterforce Temptations: Strategic Dilemmas, Doctrine, and Capabilities," *International Security* 43, no. 3 (Winter 2018/2019): 7–52, https://www.mitpressjournals.org/doi/pdf/10.1162/isec_a_00340; Rajesh Rajagopalan, "India and Counterforce: A Question of Evidence," ORF Occasional Paper 247 (New Delhi, India: Observer Research Foundation, May 2020), https://www.orfonline.org/research/india-and-counterforce-a-question-of-evidence-66126/.

[26] Dalton, "Much Ado; Panda, "India's Rethink"; Harsh V. Pant and Yogesh Joshi, "Is India Overturning Decades of Nuclear Doctrine?" *Foreign Policy*, October 23, 2020, https://foreignpolicy.com /2020/10/23/india-nuclear-no-first-use-strike-china-pakistan/.

[27] Steven E. Miller, "The Utility of Nuclear Weapons and the Strategy of No-First-Use" (paper presented at Pugwash Meeting 279, London, UK, November 15–17, 2002).

[28] Serge Schmemann, "Russia Drops Pledge of No First Use of Atom Arms," *New York Times*, November 4, 1993.

As historians and analysts continue to debate how well the available evidence supports the inclination of the Soviet leadership toward nuclear first use, U.S. and North Atlantic Treaty Organization (NATO) leaders took no meaningful assurance of adversary conduct in a crisis from the policy. This reaction suggests to contemporary observers that those who believed the Soviet NFU statement harbored false hope.[29] For the most part, the intent of the Soviet pledge was seen as propaganda purportedly aimed at undermining Western political cohesion and eroding support for NATO's theater nuclear modernization undertaken to offset the Soviet build-up of theater-range nuclear capabilities that threatened the East-West balance.[30]

The Soviet case is also the only discrete instance of an NFU policy, adopted by Leonid Brezhnev in 1982 and repudiated by Boris Yeltsin eleven years later. The lifespan of this NFU policy casts further doubt on the degree of implementation in practice. Nonetheless, in the wake of the collapse of the Soviet Union and Warsaw Pact, the reversal of NFU was attributed to the newly found inferiority of Russian conventional forces relative to an enlarging NATO. As noted by Chinese analysts, the Soviet experience with NFU illustrates that policies regarding the employment of nuclear weapons can be constrained and relaxed in tandem with a state's security circumstances, though with debatable effect.[31]

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29 Since the archives of the Soviet General Staff were never opened, the open-source debate over Soviet/Russian war planning from 1982–1993 largely depends on material obtained from the East German Archives and interviews with former Soviet officials. To what extent these data are faithful to the General Staff stance is uncertain. See Beatrice Heuser, "Warsaw Pact Military Doctrines in the 1970s and 1980s: Findings in the East German Archives," *Comparative Strategy* 12, no. 4 (1993): 437–457, https://doi.org/10.1080/01495939308402943; John A. Battilega, "Soviet Views of Nuclear Warfare: The Post-Cold War Interviews," in *Getting MAD: Nuclear Mutual Assured Destruction, Its Origins and Practice*, ed. Henry D. Sokolski (Carlisle, PA: Strategic Studies Institute, United States Army War College, 2004), 151–174; John Hines, Ellis M. Mishulovich, and John F. Shulle, *Soviet Intentions 1965–1985*, vol. I, *An Analytical Comparison of U.S.-Soviet Assessments During the Cold War*, in *Previously Classified Interviews with Former Soviet Officials Reveal U.S. Strategic Intelligence Failure Over Decades*, ed. William Burr and Svetlana Savranskaya (Washington, DC: The National Security Archive, 2009); Vojtech Mastny and Malcolm Byrne, eds., *A Cardboard Castle? An Inside History of the Warsaw Pact, 1955–1991* (Budapest, Hungary: Central European Press, 2005).

30 *Whence the Threat to Peace*, 4th ed. (Moscow: Military Publishing House, 1987), https://paxsims.files.wordpress.com/2020/07/whence-the-threat-to-peace-1987.pdf; Bob Butterworth, "No First Use: Don't Do It, Mr. President!" *Breaking Defense*, July 27, 2016, https://breakingdefense.com/2016/07/no-first-use-dont-do-it-mr-president/. For an alternative interpretation of the Soviet policy, see Nicole C. Evans, "A Defensive Orientation in Soviet and Russian Strategic Nuclear Thought? The Case of No-First-Use," *International Journal* 59, no. 1 (Winter 2003/2004): 207–220, https://doi.org/10.2307/40203911.

31 Li, "China's Evolving Nuclear Strategy;" Zhenqiang Pan, "A Study of China's No-First-Use Policy on Nuclear Weapons," *Journal for Peace and Nuclear Disarmament* 1, no. 1 (2018): 118, https://doi.org/10.1080/25751654.2018.1458415.

3. Impact on U.S. Declaratory Policy

Current and long-standing policy of calculated ambiguity conveys restraint and does not adhere to a policy of first use

A. Overview

As the central public-facing aspect of nuclear strategy, declaratory policy describes the conditions that might cause a state to consider the use (first or otherwise) of nuclear weapons. Broadly speaking, there are three types of declaratory policies: first-use, ambiguity, and NFU.[32] The United States, throughout its experience as a nuclear-armed state, has opted for a different approach than that of the Chinese, Indian, and Soviet cases described previously. Since at least the 1960s, the United States has premised much of its declaratory policy on strategic or calculated ambiguity.[33] Of the many audiences that declaratory policy seeks to message, strategic ambiguity emphasizes the perceptions of two such groups.[34] Rooted in the current strategic environment, the policy is purposely focused on the behavior of nuclear-armed adversaries and their "coercive strategies," based on a belief that unpredictability and ambiguity create uncertainty that helps deter such coercion by complicating an adversary's decision calculus.[35] The policy statement also has allies in

[32] Declaratory policy also acts to convey what a state says about the role of nuclear weapons in its security. U.S. policy is that nuclear weapons are to deter, and potentially respond to, nuclear or strategic non-nuclear attack on its territory, its forces, or its allies. This overarching statement fits neither first-use, ambiguity, nor NFU.

[33] U.S. declaratory policy under the Eisenhower Administration arguably approximated a first-use policy (see Lisle A. Rose and Neal H. Petersen, eds., *Foreign Relations of the United States, 1952–1954, National Security Affairs, Vol. II, Pt 1* (Washington, DC: United States Government Printing Office, 1984), Document 101; Samuel F. Wells, Jr., "The Origins of Massive Retaliation," *Political Science Quarterly* 96, no. 1 (Spring 1981): 34, https://doi.org/10.2307/2149675).

[34] Department of Defense, "Managing Risks of Nuclear Escalation," (Washington, DC: Office of the Under Secretary of Defense for Policy, March 11, 2020), https://larsen.house.gov/uploadedfiles/managing_risks_of_nuclear_escalation.pdf.

[35] Department of Defense, *Summary of the 2018 National Defense Strategy of the United States of* America (Washington, DC: Office of the Secretary of Defense, 2018), 6, https://dod.defense.gov/Portals/1/Documents/pubs/2018-National-Defense-Strategy-Summary.pdf.

mind, reflecting a belief that deliberate ambiguity bolsters allied confidence in U.S. assurance, particularly when compared with NFU.

As set forth by the 2018 Nuclear Posture Review (NPR) and others before it, current declaratory policy remains intentionally vague about first use, stating when nuclear weapons use might be considered and when it will not be considered.[36] It outlines a narrow set of circumstances in which the United States might contemplate employment of a nuclear weapon, while eschewing specific details regarding the scope or parameters of such circumstances. The NPR elaborates the U.S. position on nuclear weapons employment in terms of four key principles:

> The highest U.S. nuclear policy and strategy priority is to deter potential adversaries from nuclear attack of any scale.
>
> The United States would only consider the employment of nuclear weapons in extreme circumstances to defend the vital interests of the United States, its allies, and partners.
>
> If deterrence fails, the United States will strive to end any conflict and restore deterrence at the lowest level of damage possible and on the best achievable terms for the United States, allies, and partners.
>
> The United States will not use or threaten to use nuclear weapons against non-nuclear weapons states that are party to the NPT Treaty on the Nonproliferation of Nuclear Weapons] and in compliance with their nuclear nonproliferation obligations.[37]

Together, these principles go to considerable lengths to convey restraint. The first statement articulates the primary focus of the United States on deterrence of nuclear use. The second principle uses words such as "only," "extreme," and "vital" to characterize the deliberately ambiguous limits placed on nuclear use.[38] The third elaborating statement, regarding use in the instance of deterrence failure, also indicates a policy of constraint guided in part by an objective to end any conflict "at the lowest level of damage possible." Finally, the fourth principle, known as the negative security assurance, uses exclusion to identify against which countries the United States might use or threaten to use nuclear

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[36] For a detailed tracing of U.S. policy regarding nuclear use during the past decade, see Appendix B.

[37] Department of Defense, *Nuclear Posture Review (NPR) 2018* (Washington, DC: Office of the Secretary of Defense, February 2018), VII, VIII, 21, https://media.defense.gov/2018/Feb/02/2001872886/-1/-1/1/2018-NUCLEAR-POSTURE-REVIEW-FINAL-REPORT.PDF. See also "DASD for Nuclear and Missile Defense Policy."

[38] The 2018 NPR added some example instances of non-strategic attack that the 2010 NPR did not contain.

weapons. Some observers equate this statement with a partial NFU regime[39] and as an incentive for countries to not acquire their own nuclear weapons.[40]

B. Rejecting NFU

NFU is a declaratory policy statement whereby a nuclear power pledges not to initiate nuclear weapons use except in response to an adversary's nuclear attack. Since the mid-1960s, the United States has, at times, plainly rejected NFU. [41] This occasional tendency to supplement strategic ambiguity with explicit rejection of NFU, however, does not indicate U.S. adherence to a number of other policies:

- **Rejection of NFU does not automatically introduce a policy of first use.** In policy and in practice, the United States does not adhere to a first-use policy. Deliberately ambiguous, current U.S. declaratory policy is implemented by nuclear forces that operate with designed-in constraints at every layer. In establishing requirements, in weapon design, in weapon fielding, in weapon security, in decision making, in weapon employment, in personnel policy, and in training, every aspect of the U.S. nuclear force follows a series of carefully circumscribed steps to ensure that a U.S. nuclear weapon is never detonated absent authenticated presidential authority to do so and only in the most extreme circumstances.
- **Rejection of NFU does not automatically indicate primary reliance on a policy of launch under attack (LUA).** U.S. missile forces are postured to enable LUA if directed to do by the president, but the United States has long postured its forces and conducted employment planning to ensure that meeting deterrence

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39 Nina Tannenwald, "It's Time for a U.S. No First Use Policy," *Texas National Security Review* 2, no. 3 (August 01, 2019), https://tnsr.org/roundtable/its-time-for-a-u-s-no-first-use-nuclear-policy/#:~:text=A%20no%2Dfirst%2Duse%20policy,and%20its%20allies%20and%20partners.

40 Some experts believe that U.S. adoption of an NFU policy would diminish this incentive.

41 U.S. rejection of NFU arguably dates back to at least 1950, perhaps earlier. Consider the text of NSC-68: It has been suggested that we announce that we will not use atomic weapons except in retaliation against the prior use of such weapons by an aggressor. It has been argued that such a declaration would decrease the danger of an atomic attack against the United States and its allies. In our present situation of relative unpreparedness in conventional weapons, such a declaration would be interpreted by the U.S.S.R. as an admission of great weakness and by our allies as a clear indication that we intended to abandon them. Furthermore, it is doubtful whether such a declaration would be taken sufficiently seriously by the Kremlin to constitute an important factor in determining whether or not to attack the United States. It is to be anticipated that the Kremlin would weigh the facts of our capability far more heavily than a declaration of what we proposed to do with that capability.Unless we are prepared to abandon our objectives, we cannot make such a declaration in good faith until we are confident that we will be in a position to attain our objectives without war, or, in the event of war, without recourse to the use of atomic weapons for strategic or tactical purposes. See Neal H. Petersen et al., eds., *Foreign Relations of the United States, 1950, National Security Affairs; Foreign Economic Policy, Vol. 1*. (Washington, DC: United States Government Printing Office, 1977), Document 85.

objectives does not rely on the ability to employ such forces before they were disabled or destroyed.[42]

- **Rejection of NFU does not automatically indicate primary reliance on a policy of disarming-first-strike nor on a policy of preemptive strike.** The U.S. national security enterprise is geared to deter a nuclear-armed adversary's first strike, including by our nuclear posture, and to maintain readiness to use all non-nuclear means at its disposal to deter aggression and, if deterrence fails, defeat its enemies. U.S. planning does not depend on preemptive nuclear use. The fact that nuclear use can be in response to extreme provocations other than nuclear attack or to prevent an unacceptable outcome from conventional conflict does not imply that U.S. policy and plans primarily rely, or rely at all, on disarming or preemptive nuclear use.

Adopting an NFU policy would significantly reduce the long-standing level of strategic ambiguity in U.S. declaratory policy regarding the potential employment of nuclear weapons. Chapters 4–7 illustrate how this change might impact U.S. force posture, the views of U.S. allies, the views of U.S. adversaries and the risk of miscalculation, and nuclear nonproliferation.

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[42] William A. Chambers et al., *Presidential Decision Time Regarding Nuclear Weapons Employment: An Assessment and Options*, IDA Document D-10655 (Alexandria, VA: Institute for Defense Analyses, June 2019); "U.S. Nuclear Force Posture and De-Alerting," Fact Sheet, Department of State, Bureau of Arms Control, Verification, and Compliance, December 14, 2015, https://2009-2017.state.gov/t/avc/rls/250644.htm.; Arms Control Association, "Text of Nov. 28 E-mail from Strategic Command Responding to ACT's Questions on the Alert Status of U.S. Nuclear Weapons," November 2007, https://www.armscontrol.org/interviews/20071204_STRATCOM; Department of Defense, *Report on Nuclear Employment Strategy of the United States Specified in Section 491 of 10 U.S.C.* (Washington, DC: Department of Defense, June 12, 2013), 5, https://fas.org/wp-content/uploads/2013/06/NukeEmploymentGuidance_DODbrief061213.pdf.

4. Impact on the Force

NFU does not entail changing the force requirement; declaratory policy and force posture are separate matters

In the public NFU debate, the ability of the United States to execute a nuclear strike quickly is often conflated with its ability to strike first. The result is a premise that adoption of an NFU policy should drive the reduction or elimination of the U.S.' ability to respond promptly with a nuclear weapon. This premise ignores the fundamental objective of current force posture[43]—to provide the capability for a variety of flexible options to deter adversaries and assure allies, in accordance with presidential guidance, for a variety of circumstances. This posture is distinct from declaratory policy. In short, NFU, or ambiguity regarding NFU, has no effect on force needs or posture. Maintaining flexible options allows a president to decide whether an action is necessary, and if so, how prompt an action is necessary. The flexibility manifests in the following available choices:

- Nuclear and non-nuclear options;
- Immediate or delayed response options;
- An array of nuclear strike options, in terms of scale, yield and delivery mechanisms; and
- The option to use nuclear weapons first, or after a nuclear weapon is confirmed to be inbound, or has already been employed and detonated on U.S. or allied soil.

The existence of an option does not mean that the option must be exercised. Just as the president always has the ability to choose a non-nuclear option over a nuclear option, a low-yield option over a high-yield option, or to act immediately or after some period of

[43] This chapter assumes that the reader is familiar with current force posture and force requirements, summarized in Appendix C and supplemented by the Classified Annex.

time, or to not act at all, the decision to use nuclear forces first is a choice, not an imperative.[44] In other words, as described earlier, maintaining a capability to launch nuclear weapons first is not equivalent to having a "first-use" policy. U.S. forces are postured such that abstaining from nuclear use is always an option.

The overwhelming conclusion of IDA's research, including consultations with those who are or were involved in the implementation of U.S. nuclear policy and employment guidance, is that U.S. adoption of an NFU policy would not require any modification of U.S. nuclear force posture or force requirements. It stands to reason, however, that the credibility of an NFU policy could potentially be enhanced if it was accompanied by a significant change in force requirements or posture. That credibility, though, is a perception formed in the mind of the adversary. IDA's research revealed that for the main nuclear-armed competitors of the United States, a shift to NFU, even if accompanied by a significant change in nuclear force posture, is unlikely to be viewed as credible and would not cause Russia and China to favorably alter their behavior. Beyond the question of whether NFU *requires* changes to the force is the question of what adoption of NFU would *allow*. That question must fundamentally be answered based on adversary capability and intent and on the strategic setting the United States faces.

Any discussion of NFU ought to begin with the fact that an NFU policy does not necessitate changes in force posture. Nevertheless, the public debate over NFU has often raised the question of force changes and the discussion often centers on one leg of U.S. nuclear forces: the land-based intercontinental ballistic missile (ICBM) force. Voices of NFU advocates are often joined by critics of the ICBM leg of the triad, citing perceived risks inherent in the ICBM's ability to conduct nuclear strikes on very short notice. For this group, an NFU policy ought to guide the divestiture of the United States' most responsive deterrent force. In contrast, proponents of an ambiguous declaratory policy argue that the most responsive force, the ICBM, is the bedrock of strategic deterrence and that perceived risks are mitigated by the numerous safeguards in place that govern its employment.

Any debate linking NFU and the ICBM force must account for the fact that ICBMs are not the only prompt response option and that other options, with varying degrees of promptness, could still be used first. Narrowing the NFU debate to the ICBM force is thus problematic for several reasons. First, there is no reason to assume that ICBMs would be the vehicle of choice for a first strike. ICBMs provide rapid attribution and almost certainly rapid response, but the United States has other options at its disposal.[45] Second, there is no

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[44] "U.S. Nuclear Force Posture and De-Alerting," Department of State Bureau of Arms Control, Verification, and Compliance.

[45] This is not to say that other options do not have their own operational constraints. For example: maintaining a survivable at-sea posture imposes restrictions on SSBN operating depth, speed, navigation, and ability to communicate. The effectiveness of the sea-launched ballistic missiles (SLBMs) carried by SSBNs also depends on range (which can depend on warhead loadout), overflight

reason to assume that ICBMs would not be used in a second-strike capacity. They could be used to support a limited response to adversary first use.[46] Third, maintaining the capability to strike promptly is not equivalent to stating an intent to strike first. The United States has two prompt response options—ICBMs and sea-launched ballistic missiles (SLBMs) launched from SSBNs[47]—that possess complementary attributes and provide a technological hedge.[48] This prompt-strike capability has value regardless of when nuclear weapons are employed. For example, a prompt nuclear response may be deemed necessary in order to reestablish deterrence after an adversary attack, in which case the difference between minutes and hours or days could cause significant political and military risk.[49] Lastly, the ability to respond when under confirmed nuclear attack because of first use by an adversary—a deterrent capability required by every president since the early 1960s—is not precluded by an NFU policy. Current strategic conditions, current adversary capability, and, as a result, current national policy guidance still require this ability.

However, because the NFU policy debate so often tends to span questions of force structure and to be in support of the NDAA stipulation to explore implications for force posture and force requirements, IDA researched several ways in which changes to nuclear or conventional forces could accompany an NFU policy, despite the evidence indicating the lack of a link.[50] In every case, IDA's research reinforced the fact that force posture

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restrictions, and the ability to penetrate adversary ballistic missile defenses. Strategic bombers require logistics and sustainment support, in the form of specialized load crews (when generating), air refueling tankers, and parts and personnel for maintenance. Maintenance is particularly important for the aging B-52 and B-2 fleets, already challenged when it comes to meeting availability goals (see U.S. Government Accountability Office, *Weapon System Sustainment: Aircraft Mission Capable Rates Generally Did Not Meet Goals and Cost of Sustaining Selected Weapon Systems Varied Widely*, GAO-21-101SP (Washington, DC: U.S. Government Accountability Office, November 2020, https://www.gao.gov/products/GAO-21-101SP.) Perhaps most importantly, strategic bombers and dual-capable aircraft (DCA)are not currently on day-to-day alert. They require time to assemble crews, load weapons and ready the aircraft before they are deemed ready to be employed on an operational nuclear mission. (See the classified annex for bomber generation requirements.)

46 Although often overlooked, ICBMs are highly survivable as a group due to their large numbers and geographic separation. They are also located in hardened silos and connected to underground launch control centers through a system of hardened cables. See "LGM-30G Minuteman III,." Fact Sheet, U.S. Air Force, September 30, 2015, https://www.af.mil/About-Us/Fact-Sheets/Display/Article/104466/lgm-30g-minuteman-iii/.

47 See the classified annex for alert requirements for the Ground Based Strategic Deterrent (GBSD) and Ohio Replacement (Columbia-Class SSBN) programs. In some cases, flight times for SLBMs launched from SSBNs can be significantly shorter than ICBMs.

48 "Hedge" here refers to resilience given technical failures of our own systems or unanticipated advances in adversary technology that places those systems at risk.

49 William A. Chambers et al., *Presidential Decision Time*.

50 Historically, whether a country professed an NFU policy or not has been tied—at times superficially—to its conventional standing. U.S. adoption of NFU today could therefore be seen as an assertion of conventional superiority. Such an assertion may be false. At a minimum, it could result in increased pressure to regain and maintain that superiority in key areas of competition, which is problematic given

changes are likely more costly and more complicated than one might expect, especially in terms of impact to deterrent capability. In sum, IDA's exploration of changes to force requirements and force posture, thought by some to be plausibly linked to NFU, yielded no feasible changes that would provide the necessary deterrent capability for today's strategic setting. Moreover, in light of Russian and Chinese perceptions about the threat posed by some U.S. weapon systems and technologies, IDA assessed that the second-order implications of any potential NFU-driven changes to the force posture could be significant.[51]

Allies are also a factor in force posture considerations, and many experts cited that conventional force posture may also need to change to bolster allied/partner confidence in U.S. commitments to extended deterrence as the result of a change to an NFU policy. A change in posture could manifest as increased cooperation with allies and partners (e.g., more technology sharing, foreign military sales, joint exercises/capability demonstrations) or increased investments in emerging technologies to supplement capability gaps.[52] Supplementing nuclear forces with more robust conventional capabilities is nontrivial. One must consider the development, procurement, and sustainment costs and timelines, the technical challenges, the concepts of operations (e.g., whether these would be "niche" capabilities or available for widespread use), and the relative effectiveness of nuclear and conventional deterrence in national security strategy.

Because adopting an NFU policy does not require any changes to force posture or force requirements, any calculation of costs or savings would be speculative and would depend on whether one decided to change force posture or force requirements for other reasons (e.g., to bolster credibility of NFU pledge, assure allies and partners, and so forth), and on the specific form of those force posture/force requirement changes (e.g., nuclear

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the challenges to the U.S. military advantage in every warfighting domain stated in the National Defense Strategy (NDS) and affirmed by the bipartisan NDS Commission.

51 For example, Russia and China have expressed deep concern about U.S missile defense systems threatening their survivable second-strike capability and cite the need to overcome U.S. missile defenses as motivations for their own hypersonic development and nuclear modernization programs, although some of this rhetoric is likely posturing. Brad Roberts, ed. "*Major Power Rivalry and Nuclear Risk Reduction. Perspectives from Russia, China, and the United States*, LLNL-TR-809702 (Livermore, CA: Center for Global Security Research, May 2020), https://www.osti.gov/servlets/purl/1635770; Kelly Snyder, *Emerging Military Technologies: Background and Issues for Congress*, R46458 (Washington, DC: Congressional Research Service (CRS), November 10, 2020), https://fas.org/sgp/crs/natsec/R46458.pdf.

52 As an example, today nuclear-armed ballistic missiles provide a unique capability. There is no conventional weapon capable of providing "responsive, long-range strike options against distant, defended, and/or time-critical targets when other forces are unavailable, denied access, or not preferred." The United States is pursuing development of conventional hypersonic weapons to fill this capability gap as a way to bolster conventional and strategic deterrence. See U.S. Senate, "Statement of John E. Hyten, Commander United States Strategic Command, Before the Senate Committee on Armed Services," (Washington, DC: Senate Armed Services Committee, February 26, 2019), https://www.armed-services.senate.gov/imo/media/doc/Hyten_02-26-19.pdf.

only, nuclear and conventional, at home or abroad). Such cost calculations must account for a multitude of factors that go well beyond the monetary cost of the force structure itself.

In sum, the lessons from considering the impacts of an NFU policy on the force are clear: (1) declaratory policy and force posture—intent and capability—are separate matters, thus no changes in force requirements or force posture are required; (2) adversary capabilities and perceptions are key; and (3) any assessment of force posture implications must account for multiple factors that extend beyond nuclear force structure.

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5. Impact on Allies

Allies are unlikely to view NFU as beneficial or useful

The perspective of U.S. allies has been a key factor in the formation of U.S. declaratory policy and will likely continue to be. The emphasis placed by states to whom the United States provides an extended nuclear deterrence guarantee on the utility of strategic ambiguity—and the attendant commitment of the United States to employ nuclear weapons on their behalf—has been central to decisions by past NPRs and outside commissions to refrain from pursuing or recommending NFU. During the past decade, official U.S. considerations of its nuclear policy revealed allied concern over the possibility of a shift toward NFU, primarily because it was expected to instill or enhance allied doubts that the United States would, under extreme circumstances, come to their defense in an effective and timely way.[53] Pessimism about the appropriateness of NFU persists on this basis.[54]

The case in favor of an NFU policy treats less directly the position of U.S. allies on this issue and how they might respond to such a shift in policy.[55] The potential views of U.S. allies are usually folded in to the argument that adopting an NFU policy does not harm

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[53] See Josh Rogin, "U.S. Allies Unite to Block Obama's Nuclear 'Legacy,'" *Washington Post*, August 14, 2016, https://www.washingtonpost.com/opinions/global-opinions/allies-unite-to-block-an-obama-legacy/2016/08/14/cdb8d8e4-60b9-11e6-8e45-477372e89d78_story.html; Fred Kaplan, *The Bomb: Presidents, Generals, and the Secret History of Nuclear War* (New York, NY: Simon & Schuster, 2020), 253–254; Toby Dalton and Ain Han, *Elections, Nukes, and the Future of the South Korea–U.S. Alliance* (Washington, DC: Carnegie Endowment for International Peace, October 2020).

[54] United States Senate, "Senate Armed Services Committee Advance Policy Questions for Dr. Mark T. Esper Nominee for Appointment To Be Secretary of Defense" (Washington, DC: Senate Armed Services Committee, July 16, 2019), https://www.armed-services.senate.gov/imo/media/doc/Esper_APQs_07-16-19.pdf; U.S. House of Representatives, "Statement of David Trachtenberg Deputy Under Secretary of Defense for Policy Before the House Armed Services Subcommittee on Strategic Forces" (Washington, DC: Subcommittee on Strategic Forces, March 28, 2019), https://armedservices.house.gov/_cache/files/1/8/18e23135-de55-4afc-89f1-7b7d78f8875d/615ECB6DC2411B11033CF239647F01CB.hmtg-116-as29-wstate-trachtenbergd-20190328.pdf; Department of Defense, "Dangers of a Nuclear No First Use Policy" (Washington, DC: Department of Defense, 2019), https://media.defense.gov/2019/Apr/01/2002108002/-1/-1/1/DANGERS-OF-A-NO-FIRST-USE-POLICY.PDF.

[55] At times, one could argue NFU advocacy had dismissed allied concerns. See Rogin, "U.S. Allies Unite."

allied security.[56] Otherwise said, the conventional imbalance that led the United States and NATO to a particular declaratory policy choice vis-à-vis the Soviet Union purportedly now tilts in the opposite direction. The advantages of U.S. conventional forces relative to Russian and Chinese forces, according to this view, are thereby conducive to revising a legacy policy from the Cold War.[57]

Methodological challenges make it difficult to capture the alliance aspect of the NFU debate since robust empirical data related to extended deterrent relationships are challenging to isolate, extract, measure, and distill in a comprehensive and balanced way. The level of interest in details of U.S nuclear weapons posture also varies across allies and partners. Furthermore, similar to debates within the United States, each nation's domestic political parties espouse a spectrum of views on what nuclear deterrence and assurance require.[58] Nevertheless, views within and across U.S. allies regarding the role of U.S. declaratory policy in the increasingly troubling security environment represent a critical factor in the current debate.[59] IDA addressed this need through interviews with government and non-governmental experts on policy, operational, and strategic deterrence issues from European and Asia-Pacific countries.[60]

A. Likely Allied Reactions to NFU

Widespread perceptions of a deteriorating international security environment, combined with waning or low confidence in the credibility of U.S. extended deterrence suggest the allies, are unlikely to perceive NFU as beneficial or useful policy. U.S. adoption of

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56 Steve Fetter and Jon Wolfsthal, "No First Use and Credible Deterrence," *Journal for Peace and Nuclear Disarmament* 1, no. 1 (2018), 107–110, https://doi.org/10.1080/25751654.2018.1454257.

57 Kingston Reif and Daryl G. Kimball, "Rethink Oldthink on No First Use," *Bulletin of the Atomic Scientists*, 2016, https://thebulletin.org/2016/08/rethink-oldthink-on-no-first-use/.

58 For example, see Nobuyasu Abe, "No First Use: How to Overcome Japan's Great Divide," *Journal for Peace and Nuclear Disarmament* 1, no. 1 (2018): 137–151, https://doi.org/10.1080/25751654.2018.1456042.

59 Clark A. Murdock and Jessica M. Yeats, *Exploring the Nuclear Posture Implications of Extended Deterrence and Assurance: Workshop Proceedings and Key Takeaways* (Washington, DC: Center for Strategic and International Studies (CSIS), November 2009), http://csis.org/files/publication/100222_Murdock_NuclearPosture_Print.pdf; Brad Roberts, *The Case for Nuclear Weapons in the 21st Century* (Palo Alto, CA: Stanford University Press, 2016), 176–212; Frank Rose and Benjamin Bahney, "Reassuring Allies and Strengthening Strategic Stability: An Approach to Nuclear Modernization for Democrats," *War on the Rocks*, April 16, 2019, https://warontherocks.com/2019/04/reassuring-allies-and-strengthening-strategic-stability-an-approach-to-nuclear-modernization-for-democrats/.

60 These interviews were conducted on a not-for-attribution basis to encourage candid response. The expert community consulted included government and non-governmental perspectives on policy, operational, and strategic deterrence issues from Australia, Estonia, France, Japan, NATO, the Netherlands, Poland, South Korea, Sweden, and the United Kingdom. Members of the study team also participated in a virtual workshop hosted by King's College London centering on European perspectives on deterrence.

NFU could be interpreted as further erosion of the U.S. security guarantee and as a signal that the United States is deliberately limiting its obligations to allies. That said, the allies are not a monolith, and the degree of disapproval would vary from extreme to moderate to low. Despite domestic pressures to demonstrate progress toward nuclear disarmament in many NATO states, European allies—but more markedly those in Eastern Europe—would be largely opposed. In the Asia-Pacific, Japan appears to remain in firmest opposition to such a shift, but NFU would exacerbate overall concerns about the U.S.' ability to counter China's aggressive behavior and North Korea's unpredictability and would intensify existing doubts in the region about the U.S. willingness to intervene on behalf of an ally.

The other two nuclear-armed countries in NATO, France and the United Kingdom, are particularly sympathetic to strategic ambiguity. They have similar policies but rely on substantially smaller and less diverse nuclear arsenals. During the development of the 2010 NPR, one reason for rejecting NFU was the desire to remain aligned with these two allies, who were not prepared to adopt NFU or support U.S. adoption of NFU. An NFU pronouncement would have put the United States at odds with the policy of the British, the French, and NATO, all of which have long stood by a policy of calculated ambiguity.[61] Since there is no indication that the British and French stances have changed, such a discontinuity could reinforce Russia's expected objectives—disarray among Western allies—in the midst of a burgeoning crisis, perhaps increasing Russian leaders' willingness to take risk.

Fundamental to this likely reaction is recognition of increasingly challenging and dangerous regional security trends.[62] Allies are concerned by the development or refinement of concepts, capabilities, and doctrines by nuclear-armed potential adversaries like Russia, China, and North Korea that may threaten the U.S. ability to intervene decisively in a local contingency. NATO/European allies are particularly uneasy about Russia's reliance on non-strategic nuclear weapons (NSNW) and dual-capable systems in times of crisis. There are concerns that Russia, in particular, sees limited nuclear first use as a means to control escalation and that allies may perceive a deterrence "gap" in this regard. Challenges in the Asia-Pacific are motivated by the expansion of Chinese anti access/area denial (A2/AD) capability, including counter-stealth technology together with medium range-

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61 U.K. Parliament, "Nuclear Weapons: Question for Ministry of Defence," September 5, 2007, https://questions-statements.parliament.uk/written-questions/detail/2017-09-05/8502.

62 Eric Edelman and Gary Roughead, *Providing for the Common Defense: The Assessment and Recommendations of the National Defense Strategy Commission* (Washington, DC: United States Institute of Peace, 2018), https://www.usip.org/sites/default/files/2018-11/providing-for-the-common-defense.pdf; Frank Rose, "As Russia and China Improve Their Conventional Military Capabilities, Should the US Rethink Its Assumptions on Extended Nuclear Deterrence?" *Order from Chaos* (blog), Brookings Institution, October 23, 2018, https://www.brookings.edu/blog/order-from-chaos/2018/10/23/as-russia-and-china-improve-their-conventional-military-capabilities-should-the-us-rethink-its-assumptions-on-extended-nuclear-deterrence/.

missiles that can target Guam, and by a consistently provocative and unpredictable nuclear North Korea.[63] Allies see these developments as bolstering the adversary's position in the regional balance of power. While short or no-notice nuclear attacks are viewed as unlikely, "deterrence gaps" are believed to loom over a future crisis or conflict. Threats of limited nuclear use by the adversary could force the United States and its allies to capitulate or back down.[64] Against this backdrop, the constraints that NFU may place on the United States are at odds with the direction in which adversaries are moving from the allied perspective.

Similarly, dissatisfaction with the array of available and prospective conventional options for allies to manage the risks of escalation in this environment will circumscribe allied views about the potential advantages of an NFU policy. IDA found consistently that allies place high value on their relationship with the United States and consider the U.S. security guarantee critical. Yet, across the board, allies in Europe and the Asia-Pacific are worried about the fading (or loss) of the U.S. conventional advantage vis-à-vis Russia—and especially China.[65] Multiple interview participants observed that Japan and South Korea are in the same position regarding China as NATO was during the Cold War regarding the Soviet Union, underscoring the imperative of a declaratory policy based on strategic ambiguity. Aside from quantitative differences in regional strike capabilities, allies are also tracking the relative U.S. inability to operate forces across domains. China, and increasingly Russia, is seen as better integrated.[66] The ability of the United States to

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63 Department of Defense, *Military and Security Developments*; Vipin Narang and Ankit Panda, "North Korea: Risks of Escalation," *Survival* 62, no. 1 (2020): 47–54, https://doi.org/10.1080/00396338.2020.1715064.

64 Department of Defense, *Nuclear Posture Review (NPR) 2018*; Brad Roberts, *The Case for Nuclear Weapons*; Dave Johnson, *Russia's Conventional Precision Strike Capabilities, Regional Crises, and Nuclear Thresholds*, Livermore Papers on Global Security 3 (Livermore, CA: Lawrence Livermore National Laboratory, Center for Global Security Research, February 2018), https://cgsr.llnl.gov/content/assets/docs/Precision-Strike-Capabilities-report-v3-7.pdf; John K. Warden, "North Korea's Nuclear Posture: An Evolving Challenge for U.S. Deterrence," Proliferation Papers 58 (Paris, France: Études de l'Ifri, March 2017), https://www.ifri.org/sites/default/files/atoms/files/warden_north_korea_nuclear_posture_2017.pdf; Eric Heginbotham et al., *China's Evolving Nuclear Deterrent: Major Drivers and Issues for the United States* (Santa Monica, CA: RAND Corporation, 2017), https://www.rand.org/pubs/research_reports/RR1628.html; Elbridge Colby, "Against the Great Powers: Balancing Nuclear and Conventional Power," *Texas National Security Review* 2, no. 1 (November 2018): 145–152, https://tnsr.org/2018/11/against-the-great-powers-reflections-on-balancing-nuclear-and-conventional-power/.

65 Edelman and Roughead, *Providing for the Common Defense*.

66 Jonathan D. Caverley et al., "Policy Roundtable: The Future of Japanese Security and Defense," *Texas National Security Review*, October 1, 2020, https://tnsr.org/roundtable/policy-roundtable-the-future-of-japanese-security-and-defense/; Eric Sayers and Sugio Takahashi, "America and Japan in A Post-INF World," Center for a New American Security (CNAS), March 8, 2019, https://www.cnas.org/publications/commentary/america-and-japan-in-a-post-inf-world.

redress any conventional imbalance—and position itself to do so in a sustainable way over the long term—will thus likely endure as a key challenge for NFU proponents.

An NFU policy would also likely call into question the credibility of U.S. extended nuclear deterrence at a point when allied confidence in that relationship is shaken. Even with disarmament debates ongoing in many European countries, NATO members perceive a troubling gap in the deterrent balance with Russia that NFU might exacerbate. Maintaining the capability for first use was seen as especially important in the Asia-Pacific, where the extended deterrence architecture is seen as "undercapitalized" and "neglected." Without a nuclear-sharing arrangement or permanent regional presence, U.S. extended nuclear deterrence capabilities in Asia may be seen as little more than a "possibility that they will be deployed as a contingency or during a crisis in the Asia-Pacific region."[67] NFU could undermine that promise even further.

B. Mitigating Allied Concerns about NFU

Though the allied reaction will likely be negative, the degree of allied opposition to an NFU policy could be mitigated by *how* the change to current declaratory policy is coordinated and implemented. The level, pace, and depth of engagement inherent in the supporting process are essential to the allied reaction.[68] Many interviewees mentioned the importance of consistency, with one stating that "allies dread rapid changes." For example, if the shift included consultations over a long period and is fully transparent, allies may respect the choice, even if it is not one they welcome. Accordingly, the value of engaging such allies will depend on the quality of the consultative process, which, especially in the Asia Pacific, is a matter allies believe needs improvement. Many interview participants pointed out that current forums in the Asia-Pacific may not adequately examine these issues. For those allies that have formal alliances or bilateral fora, including Japan and South Korea, regardless of their position on NFU, consultations on such policy issues could purportedly become more robust to focus on more detailed planning issues, such as conventional-nuclear integration.

With that said, even if an NFU policy is preceded and followed by a substantial consultative process, allied concerns may call for significant capability enhancements, possibly to include military investment to improve the regional conventional balance and enhance interoperability. Indeed, several participants noted that NFU would be impossible without material compensation to intensify assurance. The case of the Tomahawk Land

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67 Masashi Maurano, "What the New US Nuclear Posture Means for Northeast Asia," *The Diplomat*, August 29, 2018, https://thediplomat.com/2018/08/what-the-new-us-nuclear-posture-means-for-northeast-asia/.

68 For example, although the U.S. decision to retire Tomahawk land attack cruise missile/nuclear (TLAM-N) was not welcome, allied consultations surrounding that decision and announcement paved the way for good movement.

Attack Missile – Nuclear (TLAM-N), retired during the development of the 2010 NPR, speaks to an important lesson. Despite extensive consultations beforehand, especially with Japan, the removal of the TLAM-N capability prompted major concern about a deterrence gap—one that the United States continues to hear about ten years later.[69]

Notwithstanding U.S. declaratory policy, allies in Europe and the Asia-Pacific already see many ways that they would like the United States to strengthen bonds with their governments. Thus alliances would need, in conjunction with an NFU pledge, to see the United States offer a broader suite of tools, with the exact composition of that suite (e.g., conventional troop deployments, missile defenses, bilateral security agreements) varying from ally to ally.[70] Whether stronger conventional capability can offset the "loss" of strategic ambiguity is unclear. Even then, there are second-order effects of "deterrence compensation" that the United States will need to weigh, such as the impact on progress toward arms control with adversaries and the degree of latency in allied development of nuclear or strategic means.

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[69] Sandy Winnefeld and James N. Miller, "Bring Back the Nuclear Tomahawks," *Proceedings* 143, no. 5 (May 2017), https://www.usni.org/magazines/proceedings/2017/may/bring-back-nuclear-tomahawks.

[70] Benjamin Schreer, "After the INF: What Will US Indo-Pacific Allies Do?" *The Washington Quarterly* 43, no. 1 (2020): 143–157, https://doi.org/10.1080/0163660X.2020.1736885.

6. Impact on Adversaries and the Risk of Miscalculation

NFU will not favorably alter adversary behavior nor affect the risk of miscalculation

The utility of a state declaring how it intends to employ a particular national capability rests in large part on that declaration's instrumental value (i.e., the extent to which the declaration favorably alters the perceptions, decision making, or actions of adversaries). The NFU debate is animated, in particular, by diverging opinions regarding whether and how such a policy alters the risk of adversary "miscalculation" during a crisis. While this term is used differently by different analysts, miscalculation is generally invoked to describe a phenomena whereby one state takes an action based on an incorrect estimation of another state's intent or likely response. Advanced with equal conviction, arguments in support of and against a favorable connection between U.S. adoption of an NFU policy and the risk of miscalculation are primarily concerned with deterrence of different types of adversary behavior.[71]

Proponents of NFU tend to assert that the policy will drive down the probability that China or Russia, mistakenly fearing a devastating or limited U.S. nuclear attack, will launch their own first strike or in the case of Russia, a pre-emptive attack.[72] According to this rationale, by improving the adversary's understanding of the scope or parameters of

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[71] IDA did not consider the connection between NFU and unauthorized use or accidental launch. Such arguments conflate the role of declaratory policy for the role of policies, procedures, and trained personnel in maintaining positive command and control over nuclear weapons. Nuclear command, control, and communications (NC3) is the most direct and effective way to ensure against accidental or inadvertent launch.

[72] For example, see perspectives from Nina Tannenwald and Jon B. Wolfsthal in Galen Jackson et al., "Nuclear First-Use and Presidential Authority," *Texas National Security Review*. July 2, 2019, https://tnsr.org/roundtable/policy-roundtable-nuclear-first-use-and-presidential-authority/. See also James E. Cartwright and Bruce G. Blair, "End the First-Use Policy for Nuclear Weapons," *New York Times*, August 14, 2016; Reif and Kimball, "Rethink Oldthink"; "No First Use: Myths vs. Realities," Center for Arms Control and Non-Proliferation, https://armscontrolcenter.org/issues/no-first-use/no-first-use-myths-vs-realities/.

what would warrant U.S. consideration of first use, NFU would alleviate adversary pressure to seize the initiative, thereby slowing decision making and opening windows for the exploration of less escalatory options or off-ramps.

The opposing view posits that NFU will create additional risk elsewhere, ultimately making the United States worse off.[73] Adversaries will interpret NFU as evidence that a major conventional, cyber, chemical, or biological attack against the United States or its allies will not induce a nuclear response.[74] As an invitation to act with relative impunity, NFU would embolden U.S. adversaries and possibly make conventional conflict between nuclear-armed states more likely.[75] This concern is often expressed by U.S. allies in the Asia-Pacific, who worry that NFU will encourage China to behave more aggressively at the non-nuclear level.

The truth about the relationship between NFU and miscalculation—be it discouraging, conducive, or trivial—cannot be captured precisely. The risk of miscalculation can never be driven to zero, and only history will determine whether a decision-maker's risk tolerance was correct. Furthermore, given the closely held nature of adversary perceptions on matters related to nuclear weapons, an unclassified attempt to answer such a question will be characterized by uncertainty.[76] That said, the open-source literature offers an authoritative and empirically driven foundation for how potential adversaries like Russia and China perceive the credibility of an NFU pronouncement by the United States. Their interpretation will go far in determining the policy's ultimate impact, if any, on the risk of miscalculation in a crisis.[77]

From the vantage point of Moscow or Beijing, how clearly would NFU signal U.S. intent about the circumstances under which it would consider employing nuclear weapons? In other words, to what extent could they rely on an NFU policy as a predictor of U.S. behavior? Consider how CDRUSSTRATCOM describes his framework for posturing U.S. nuclear forces in light of China's NFU policy: "It's my responsibility to make sure that I have thought through what we have to do to deter what they're capable of doing as opposed

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73 For example, see perspective from John Harvey in Jackson et al., "Policy Roundtable: Nuclear First-Use and Presidential Authority."

74 Franklin C. Miller and Keith B. Payne, "No First-Use Advocacy: Contradictions and Guesswork," National Institute for Public Policy Information Series, Issue 411 (Fairfax, VA: National Institute Press, September 7, 2016), https://www.nipp.org/wp-content/uploads/2016/09/IS-411-final-9.7.16.pdf.

75 U.S. House of Representatives, "Statement of John E. Hyten, Commander United States Strategic Command Before the House Armed Services Subcommittee on Strategic Forces" (Washington, DC: House Committee on Armed Services, March 28, 2019), https://armedservices.house.gov/2019/3/fiscal-year-2020-priorities-for-department-of-defense-nuclear-priorities; Elbridge Colby, "Nuclear Weapons Aren't Just For the Worst Case Scenario," *Foreign Policy*, August 4, 2016, https://foreignpolicy.com/2016/08/04/nuclear-weapons-arent-just-worst-case-scenario-first-use-china-obama-trump/.

76 Adversary views are covered by the classified annex.

77 Given resource limitations, the adversaries considered by this paper include primarily Russia and China.

to what they say they're going to do."[78] Applying this perspective forward and drawing on existing and recent scholarship, it is reasonable to suppose potential U.S. adversaries will form an assessment of NFU's credibility based on much more than the content of the policy declaration itself.[79] As a statement of intent, and a quickly reversible one at that, declaratory policy may not necessarily guide decision making in a crisis-to-conflict transition or during active hostilities. Perceptions of the credibility of an NFU pledge thus combine with a host of other factors, including U.S. capabilities, doctrine, and operational war plans, to be important.[80]

Our research concludes that as Moscow and Beijing consider and assimilate the totality of information and intelligence at their disposal about U.S. nuclear forces, a policy pronouncement of NFU is unlikely to alter how they perceive that the United States will approach a crisis.[81] Consistent with the NFU empirical record thus far, a concomitant change in U.S. posture or capability might help convince Russia and China that the pledge is genuine, but there is little guarantee. Strikingly, IDA's interviews suggests that even if NFU was attended by a downgrade in the overall readiness of U.S. nuclear forces, Russia and China will probably continue to doubt that U.S. intent and objectives have changed. While material evidence of NFU might "give adversaries pause," according to one former official, the superiority of other aspects of U.S. forces would ultimately overrule or outweigh this consideration. For example, an NFU policy complemented by an effort to de-alert ICBMs is not likely to change adversary planning, operations, or crisis behavior due to the perceived speed, accuracy, and survivability and the targeting coverage implications of U.S. SLBM forces. The barriers to a credible NFU policy appear severe, especially for a country like the United States, which would pursue the policy *after* developing and deploying a large, diverse nuclear arsenal structured to provide a flexible set of deterrent options.

Assuming that the United States takes all necessary steps to ensure that an NFU policy is implemented and sufficiently messaged to adversaries and that, despite evidence to the contrary, the adversaries believe that pledge, will that belief alter the risk of miscalculation?

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78 Department of Defense, "Adm. Richard Discusses USSTRATCOM Operations."

79 Austin Long, "Myths or Moving Targets? Continuity and Change in China's Nuclear Forces," *War on the Rocks*, December 4, 2020, https://warontherocks.com/2020/12/myths-or-moving-targets-continuity-and-change-in-chinas-nuclear-forces/; Daryl G. Press, *Calculating Credibility: How Leaders Assess Military Threats* (Ithaca, N.Y.: Cornell University Press, 2005); Joshua D. Kertzer, *Resolve in International Politics* (Princeton, NJ: Princeton University Press, 2016).

80 ADM Richard continues to illuminate here:"…just measuring a nation's stockpile is a relatively crude measure of their capabilities. You have to look at the totality of it, the delivery systems, what they're capable of, what their readiness is" (see Department of Defense, "Adm. Richard Discusses USSTRATCOM Operations").

81 At the same time, China is much less likely than Russia to express this view publicly, given its own NFU policy (and questions about its credibility).

Again, the available evidence suggests that NFU cannot be expected to have a significant impact on the risk of miscalculation in crisis. As one former senior leader said, there are far more fundamental factors involved than the effect of a policy that can be instantly changed. The historical record is mixed, at best, regarding the effect of declaratory policy on the decision making, operational behavior, and policy of other nation-states. Scholars of international relations and strategic thought point to a host of factors that affect a nation-state's decisions and behaviors, one of which is that state's determination of its own self-interests.

National decisions to act, including the use of force, are also driven by a state's interpretation of the strategic setting at the time and its stakes and risks in the midst of a crisis. To this end, there is evidence that today's nuclear-armed actors have theories of victory, operational doctrines, and fielded capabilities that make plausible their willingness to employ nuclear weapons, at least in a limited way, to achieve their objectives in a regional conflict under certain circumstances.[82] Indeed, U.S. policy and military leaders believe that this scenario is, among all the very unlikely uses of nuclear weapons, the more likely, and it is the scenario currently emphasized in planning and exercises. Given what is known about the adversary, a U.S. shift to NFU could serve to reinforce adversary perceptions of lower risk and abet aggressive action, particularly action enabled by posture and planning that provide them the option to initiate nuclear use and thus achieve their objectives in a regional conflict. Creating such a perception might also lead adversaries to think that they can better control escalation. Deterrence aims to raise perceived risk and complicate the adversary's decision calculus, and this outcome could produce the opposite effect.

Moreover, Russia's and China's pursuits of ends, ways, and means to achieve their objectives in a competitive international arena—behavior that is observable and measurable—appear to be motivated much more by national interests as opposed to U.S. declaratory policy. The stated objectives of these two actors, borne out by their behavior, are to disrupt and derail U.S. leadership globally, to prevent the U.S.' ability to intervene so as to achieve regional and global influence, and to build all-domain military capabilities, including nuclear, and the economic means to do so. Those objectives and this behavior led the National Defense Strategy (NDS) to paint this picture of the strategic setting:

> The central challenge to U.S. prosperity and security is the *reemergence of long-term, strategic competition* by what the National Security Strategy classifies as revisionist powers. It is increasingly clear that China and Russia want to shape a world consistent with their authoritarian model—gaining veto authority over other nations' economic, diplomatic, and security decisions.[83]

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[82] Johnson, *Russia's Conventional Precision Strike Capabilities*.

[83] Department of Defense. *Summary of the 2018 National Defense Strategy*, 2.

These pursuits by the two principal nuclear-armed competitors of the United States and the motivation behind them (as measures of how they will behave in peacetime crisis, and conflict) matter more than a U.S. policy declaration. Russia and China are not behaving as benign competitors; rather, the evidence indicates that they have long-term goals that are opposed to U.S. interests and values and that they are acting on a daily basis to achieve them.

Looking beyond the behavior of the United States, Russia, and China, it is important to look at the effects on miscalculation risk stemming from the behavior of other actors.[84] For instance, if the United States adopted an NFU policy, would the behavior of U.S. allies become more or less predictable in the midst of a crisis involving a nuclear-armed adversary in their region? That issue is difficult to assess, but history indicates that a nation-state's "management" of its allies and their perceptions, in the midst of crisis, is far more difficult than bolstering their perceptions and assurances in peacetime. Our findings in the previous chapter indicate that an NFU policy risks weakening allied perceptions of U.S. resolve.

[84] Robert Chase, Emily B. Hill, and Paul Kennedy, eds., *The Pivotal States: A Framework for a New American Policy in the Developing World* (New York, NY: W. W. Norton & Co., 1999).

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7. Impact on Nuclear Nonproliferation

Nation-states make decisions about their security needs based less on U.S. policy and more on their own interests

A. Overview

Many defense policy officials and analysts have addressed the consequences for nuclear nonproliferation of a potential shift by the United States toward a declaratory policy premised on NFU.

The postulated benefits tend to center on the overall effectiveness of the nuclear nonproliferation regime, conceptualized here as the NPT and complementary institutions and activities, all of which seek to prevent the spread of nuclear weapons and dangerous nuclear materials.[85] The case for NFU, albeit somewhat generalized, goes as follows: U.S. adoption of NFU will be perceived as a signal of greater U.S. commitment to reducing the role of nuclear weapons in international security and thereby to Article VI of the treaty. Accordingly, the step will convince many NPT non-nuclear weapons states (NNWSs) that NPT nuclear-weapon states (NWSs) are committed to long-term nuclear disarmament.[86] An NFU policy will thus afford the United States greater ability to lead the regime, lifting current roadblocks to intra-regime cooperation, thereby accruing "broader diplomatic and non-proliferation benefits."[87] Such returns are usually anticipated to take the form of "greater multilateral alignment with U.S.-led non-proliferation efforts," such as

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85 For a definition of the regime, see Rebecca Davis Gibbons, "American Hegemony and the Politics of the Nuclear Nonproliferation Regime" (PhD diss., Georgetown University, 2016), 6, https://repository.library.georgetown.edu/bitstream/handle/10822/1041833/Gibbons_georgetown_0076D_13333.pdf?sequence=1&isAllowed=y. For an overview of the components and breadth of the regime, see "Nuclear Weapons," United Nations Office for Disarmament Affairs, https://www.un.org/disarmament/wmd/nuclear/.

86 Scott D. Sagan, "The Case for No First Use," *Survival* 51, no. 3 (2009): 169, https://doi.org/10.1080/00396330903011545; Michael S. Gerson, "No First Use: The Next Step for U.S. Nuclear Policy." *International Security* 35, no. 2 (Fall 2010): 42, https://www.mitpressjournals.org/doi/pdf/10.1162/ISEC_a_00018; "No First Use: Myths vs. Realities," Center for Arms Control and Non-Proliferation.

87 Sagan, "The Case for No First Use," 169.

"increase(d) international diplomatic support for tougher diplomatic measures against potential proliferators."[88]

Arguments about the risks of an NFU policy for nuclear nonproliferation usually center on the likelihood of proliferation by U.S. allies. This case against NFU is typically rooted in a perceived reduction of the credibility of U.S. extended nuclear deterrence, making allies less assured of U.S. security guarantees and leading them to pursue their own nuclear weapons programs to redress an ability to meet security needs.[89] This would-be consequence of NFU is considered most salient for allies that currently have, to varying degrees, technical ability (in terms of material and expertise) and potential interest (in terms of domestic political debate) in acquiring independent nuclear arsenals.[90] Untoward second- and third-order effects are also possible under such circumstances should regional actors—friendly and less friendly with the United States—respond to proliferation activities with additional arms build-ups.

B. Assessment

How a U.S. pledge of NFU will affect nuclear nonproliferation hinges on a more fundamental question: To what extent do U.S. decisions about U.S. nuclear policies bear on the proliferation and non-proliferation decisions of other states? To be fair, the NPT explicitly stipulates such a connection by simultaneously calling for NWS' pursuit of disarmament and NNWS' renunciation of nuclear weapons. Yet, the effectiveness of NPT implementation suggests that the reality is more complicated. In addition, while the link between these two sets of behaviors has been increasingly subjected to analytical scrutiny,

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88 Sagan, "The Case for No First Use," 174; Gerson, "No First Use: The Next Step," 42–43; Joe Gould, "Warren, Smith Introduce Bill to Bar US from Using Nuclear Weapons First," *Defense News*, January 30, 2019, https://www.defensenews.com/congress/2019/01/30/warren-smith-introduce-bill-to-bar-us-from-using-nuclear-weapons-first/.

89 U.S. House of Representatives, "Statement of Victorino Mercado Performing the Duties of Assistant Secretary of Defense for Strategy, Plans, and Capabilities Before the House Armed Services Subcommittee on Strategic Forces" (Washington, DC: Subcommittee on Strategic Forces Hearing, March 3, 2020), https://armedservices.house.gov/2020/3/subcommittee-on-strategic-forces-hearing-the-fiscal-year-2021-budget-request-for-nuclear-forces-and-atomic-energy-defense-activities; U.S. Senate, "Presentation of Rob Soofer, Deputy Assistant Secretary of Defense for Nuclear and Missile Defense Policy, to the Senate Armed Services Subcommittee on Strategic Forces" (Washington, DC: Armed Services Subcommittee on Strategic Forces April 28, 2020); Department of Defense, "Dangers of a Nuclear No First Use Policy"; U.S. House of Representatives. "Statement of David Trachtenberg."

90 Mark Fitzpatrick, "How Japan Could Go Nuclear: It Has the Smarts and the Resources, but Does Tokyo Have the Will?" *Foreign Affairs*, October 3, 2019, https://www.foreignaffairs.com/articles/asia/2019-10-03/how-japan-could-go-nuclear; Mark Fitzpatrick, "Asia's Latent Nuclear Powers: Japan, South Korea and Taiwan," Adelphi Paper No. 445 (London, UK: International Institute for Strategic Studies (IISS), 2016); Dalton and Han, *Elections, Nukes, and the Future*; "Blinken: U.S. Protections Prevents Korea, Japan from Going Nuclear," *Korean Times*, June 30, 2016.

claims about the strength and direction of available evidence continue, as one scholar highlighted in 2008, "to point in many directions at once."[91]

Recent theoretical and empirical work on the "linkage hypothesis," as well as original research conducted on behalf of this research, suggests that arguments both for and against NFU overestimate its prospective effects on nuclear nonproliferation.[92] The advocates of NFU, for their part, seem overly optimistic about the benefits. An NFU declaration by the United States would likely be well received by some "non-aligned" NNWS parties to the treaty who consider themselves non-aligned and may even facilitate a successful outcome of the 2021 Review Conference, similar to the perceived effect of Obama Administration policies in 2010.[93] Beyond the immediate reaction, however, the advantages are highly uncertain.[94] Fundamentally, it is a nation-state's own assessment of its security that plays a major role in whether to pursue nuclear weapons. Non-proliferation research consistently finds that NWS actions in support of disarmament will broadly benefit the regime but cannot be expected to provide a "cure-all for every ailment confronting it."[95] Paradoxically, the willingness of NNWS to work with the United States in support of non-proliferation

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91 Christopher F. Chyba, "Time for a Systematic Analysis: U.S. Nuclear Weapons and Nuclear Proliferation," *Arms Control Today*, December 2008, https://www.armscontrol.org/act/2008-12/features/time-systematic-analysis-us-nuclear-weapons-nuclear-proliferation. Affirmations of this finding can be found in Jeffrey W. Knopf, "Nuclear Disarmament and Nonproliferation: Examining the Linkage Argument," *International Security* 37, no. 3 (Winter 2012/2013): 92–132, https://www.jstor.org/stable/41804175; Matthew Kroenig, "US Nuclear Weapons and Non-Proliferation: Is There a Link?" *Journal of Peace Research* 53, no. 2 (March 2016): 166–179, https://www.jstor.org/stable/pdf/43920007.pdf.

92 Alexander Lanoszka, *Atomic Assurance: The Alliance Politics of Nuclear Proliferation* (Ithaca, NY: Cornell University Press, 2018); Gibbons, "American Hegemony and the Politics"; Kroenig, "US Nuclear Weapons and Non-Proliferation"; Jeffrey M. Kaplow, "The Constraining Power of International Security Institutions" (PhD diss., University of California, San Diego, 2015), https://escholarship.org/uc/item/2dg4g0bp; Matthew Fuhrmann and Todd S. Sechser, "Nuclear Strategy, Nonproliferation, and the Causes of Foreign Nuclear Deployments," *Journal of Conflict Resolution* 58 no. 3 (2014): 455–480, https://www.jstor.org/stable/2454564; Scott D. Sagan and Jane Vaynman, eds., "Arms, Disarmament & Influence: International Responses to the 2010 Nuclear Posture Review," *Nonproliferation Review* 18, no. 1 (March 2011), https://nonproliferation.org/research/nonproliferation-review/npr-18-1/.

93 Deepti Choubey, "Are New Nuclear Bargains Attainable?" (Washington, DC: Carnegie Endowment for International Peace, 2008), https://carnegieendowment.org/files/new_nuclear_bargains2.pdf; Harald Müller, "A Nuclear Nonproliferation Test: Obama's Nuclear Policy and the 2010 NPT Review Conference," *Nonproliferation Review* 18, no. 1 (2011): 219–236, https://doi.org/10.1080/10736700.2011.549182.

94 Roberts, "Debating Nuclear No-First-Use, Again" 45, 52.

95 Andrew Grotto, "Why Do States That Oppose Nuclear Proliferation Resist New Nonproliferation Obligations? Three Logics of Nonproliferation Decision-Making," *Cardozo Journal of International and Comparative Law* 18, no. 1 (Winter 2010): 1–44, https://heinonline.org/HOL/Page?collection=journals&handle=hein.journals/cjic18&id=1&men_tab=srchresults; Knopf, "Nuclear Disarmament and Nonproliferation."

objectives may be driven more by favorable perceptions of U.S. global leadership than on the basis of the non-proliferation regime specifically.[96]

Similarly, theories about NFU's risks may be too sweeping. While NFU is indeed likely to generate questions about the credibility of extended nuclear deterrence, the path between those concerns and an independent nuclear arsenal for any U.S. ally would not be automatic. The phenomena of proliferation is well known to be multi-causal—driven not just by security factors, but also by technical, economic, normative, psychological, domestic political, organizational, and institutional factors. It is also a complicated pursuit, requiring the navigation of many steps and obstacles. Still, if the United States does commit to NFU, it is plausible that for particular allies, certain trends could align in a way that weakens current proliferation barriers.[97]

[96] Gibbons, "American Hegemony and the Politics."

[97] Caverley et al., "Policy Roundtable: The Future of Japanese Security and Defense."

8. Concluding Observations

Significant potential to do more harm than good

The FY20 NDAA's highlight of NFU calls for an examination of specific matters that represent crucial factors in the determination of national security policy. Since the contemporary strategic setting for the United States and its allies involves day-to-day competition with nuclear-armed powers, the effect of a change in policy on the behavior of those actors is foundational to any study of that policy's implications. The behavior of potential adversaries is all the more critical in light of their strategic objectives, which include disruption of the U.S.-led international order, regime longevity, increased influence along their periphery, and the fracturing of U.S. bonds with allies and partners.

Another foundational aspect to any change in U.S. national security policy is the prospective effect of such a change on the behavior of U.S. allies and partners. Indeed, for the past seventy-five years, senior political and military leaders have counted U.S. allies as a critically necessary strength, and, in today's strategic setting, that strength is considered an asymmetrical advantage relative to our peer or near-peer competitors.

In light of this context, IDA's research concludes that U.S. adoption of an NFU policy will not bring about a setting that is more conducive to improved behavior by adversaries or to strengthened relations with allies. The available evidence indicates that Russia and China will not view such a shift in U.S. policy as credible. It will not be cause for them to alter their current course of military and nuclear modernization, and they will seek to leverage the move to gain diplomatic capital and undermine alliances. Evidence regarding allied perspectives should be viewed case by case. However, for those states most linked to U.S. nuclear security assurances and most concerned about Russian and Chinese aggression, a shift to NFU can be expected to enhance anxieties, dilute assurance, prompt pursuit of other security guarantees, and potentially drive the need for the United States to engage in costly improvements in and expansion of conventional and non-nuclear military capabilities. It is also significant that the allied perspective captured by IDA highlights the need for the United States to strengthen its bonds with allies using a number of mechanisms, none of which relate to declaratory policy.

Given no likely change in adversary behavior in a positive direction and an increase in uncertainty of U.S. security assurances by allies, IDA's research indicates that the risk of miscalculation in crisis will not be lowered by U.S. adoption of an NFU policy. Russia

and China do not principally fear an all-out U.S. nuclear strike. Moreover, an NFU policy could create room for regional adventurism and aggression, particularly in light of our adversaries' development of high-end conventional technologies and theater nuclear strike capabilities. Such a temptation by adversaries serves concomitantly to increase the worry of allies, who may already be anxious about a U.S. shift in policy. Fundamentally, many factors affect potential miscalculation in crisis, but declaratory policy is not one of them.

Finally, although an NFU pledge may open avenues to strengthen the U.S. position in the current nuclear non-proliferation regime, the ultimate overall effect on nonproliferation across the globe is uncertain at best and fleeting at worst. In short, historical evidence does not support the likelihood of a change in the proliferation and non-proliferation stances of other states as a direct result of a change to U.S. policy or behavior.

The debate about how the United States should message the conditions under which it would employ nuclear weapons has persisted throughout the nuclear age. The NFU debate continues, primarily driven by factors that are unknowable or beyond the control of U.S. policy (e.g., how adversaries would react in a crisis, and whether NFU will have an impact on nonproliferation (positive or negative)). High error bars are understandable. After all, in discerning the implications of a hypothetical, one is dealing with considerable uncertainty.

Yet, there are direct implications of the United States adopting an NFU policy that are more straightforward to assess: the changes to force posture (nuclear and conventional) that could follow, if any; plausible adversary perceptions; how to best consult with and assure allies, including what materiel compensation the United States is prepared to provide; and all associated costs. In light of the inherently constrained nature of current U.S. policy and procedure governing nuclear use, the weight of all the evidence indicates significant potential for NFU to impart more harm than good.

Appendix A. Legislative Requirement

SEC. 1673. INDEPENDENT STUDY ON POLICY OF NO-FIRST-USE OF NUCLEAR WEAPONS.[1]

a) STUDY.–Not later than 30 days after the date of the enactment of this Act, the Secretary of Defense shall seek to enter into a contract with a federally funded research and development center to conduct a study on the United States adopting a policy to not use nuclear weapons first.

b) MATTERS INCLUDED.–The study under subsection (a) shall include the following:

    1) An assessment of the benefits of a policy to not use nuclear weapons first in reducing the risk of miscalculation in a crisis.

    2) An assessment of the likely reactions of the allies of the United States with respect to the United States adopting such a policy and how any negative reactions could be mitigated, including the value of engaging such allies to offer credible extended deterrence assurances.

    3) An assessment of which foreign countries have stated or adopted such a policy, including the credibility of any such policies and how they affect planning and operations.

    4) An assessment of how adversaries of the United States might view such a policy.

    5) An assessment of the benefits and risks of such a policy with respect to nuclear nonproliferation.

    6) An assessment of changes in force posture and force requirements, if any, and costs or savings, that such a policy would require or allow.

    7) Any other matters the Secretary determines appropriate.

[1] National Defense Authorization Act for Fiscal Year 2020, Pub. L. No: 116-92, 133 Stat. 198, 116th Cong. (2019), 133 Stat. 1776–1777, https://www.congress.gov/116/plaws/publ92/PLAW-116publ92.pdf.

c) SUBMISSION TO DOD.–Not later than 240 days after the date of the enactment of this Act, the federally funded research and development center shall submit to the Secretary the study under subsection (a).

d) SUBMISSION TO CONGRESS.–

1) INTERIM BRIEFING.–Not later than 120 days after the date of the enactment of this Act, the Secretary shall the Secretary shall provide to the appropriate congressional committees an interim briefing on the study under subsection (a).

2) STUDY.—Not later than 270 days after the date of the enactment of this Act, the Secretary shall submit to the appropriate congressional committees the study under subsection (a), without change

e) FORM.–The study under subsection (a) shall be submitted under subsections (c) and (d)(2) in unclassified form, but may include a classified annex.

f) APPROPRIATE CONGRESSIONAL COMMITTEES DEFINED.–In this section, the term “appropriate congressional committees” means–

1) the congressional defense committees; and

2) the Committee on Foreign Affairs of the House of Representatives and the Committee on Foreign Relations of the Senate.

Appendix B.
U.S. Declaratory Policy Regarding Employment of Nuclear Weapons

Current Policy, 2018–2020

The current policy of the United States regarding the use of nuclear weapons is as stated in the 2018 NPR:

> The United States would only consider the employment of nuclear weapons in extreme circumstances to defend the vital interests of the United States, its allies, and partners. Extreme circumstances could include significant non-nuclear strategic attacks. Significant non-nuclear strategic attacks include, but are not limited to, attacks on the U.S., allied, or partner civilian population or infrastructure and attacks on U.S. or allied nuclear forces, their command and control, or warning and attack assessment capabilities.
>
> The United States will not use or threaten to use nuclear weapons against non-nuclear weapons states that are party to the NPT [Treaty on the Non-proliferation of Nuclear Weapons] and in compliance with their nuclear non-proliferation obligations.
>
> Given the potential of significant non-nuclear strategic attacks, the United States reserves the right to make any adjustment in the assurance that may be warranted by the evolution and proliferation of non-nuclear strategic attack technologies and U.S. capabilities to counter that threat.
>
> To help preserve deterrence and the assurance of allies and partners, the United States has never adopted a "no first use" policy and, given the contemporary threat environment, such a policy is not justified today. It remains the policy of the United States to retain some ambiguity regarding the precise circumstances that might lead to a U.S. nuclear response.[1]
>
> (An important statement from the Executive Summary.) The United States would only consider the employment of nuclear weapons in extreme circumstances to defend the vital interests of the United States, its allies, and

[1] Department of Defense, *Nuclear Posture Review (NPR) 2018* (Washington, DC: Office of the Secretary of Defense, February 2018), 21–22, https://media.defense.gov/2018/Feb/02/2001872886/-1/-1/1/2018-NUCLEAR-POSTURE-REVIEW-FINAL-REPORT.PDF. See also "DASD for Nuclear and Missile Defense Policy Delivers Remarks at the Mitchell Institute Nuclear Deterrence Forum Series," Department of Defense, September 2, 2020, https://www.defense.gov/Newsroom/Transcripts/Transcript/Article/2337753/dasd-for-nuclear-and-missile-defense-policy-delivers-remarks-at-the-mitchell-in/.

> partners. Nevertheless, if deterrence fails, the United States will strive to end any conflict at the lowest level of damage possible and on the best achievable terms for the United States, allies, and partners. U.S. nuclear policy for decades has consistently included this objective of limiting damage if deterrence fails.[2]

Articulations of this policy since the 2018 NPR's release include these statements during Congressional testimony by the Under Secretary of Defense for Policy in March 2019 regarding nuclear weapons policy:

> The United States has a long-standing policy of constructive ambiguity regarding U.S. nuclear employment that has deterred potential adversaries from nuclear coercion or aggression since the advent of the nuclear age.[3]

Further, the Department reiterated this policy in an April 2019 Fact Sheet titled *The Dangers of a Nuclear No First Use Policy*:

> Today, the U.S. continues its long-standing policy of retaining some degree of ambiguity regarding the precise circumstances that might lead to a U.S. nuclear response.
>
> Retaining a degree of ambiguity and refraining from a no first use policy creates uncertainty in the mind of potential adversaries and reinforces deterrence of aggression by ensuring adversaries cannot predict what specific actions will lead to a U.S. nuclear response.
>
> Operational scenarios exist in which the U.S. would consider first use.[4]

Then, in response to Advance Policy Questions from Congress in July 2019, as part of his Confirmation hearing, Secretary Esper addressed U.S. nuclear policy:

> **Do you believe a nuclear "No First Use" policy would be appropriate for the United States? Please explain your answer?**
>
> No. The United States has never adopted a "No First Use" policy and should refrain from doing so in this increasingly complex and dangerous nuclear environment. A No First Use policy could increase the likelihood an adversary could miscalculate U.S. resolve and redlines. It could also create doubt among allies and partners that the United States would effectively and in a timely way come to their defense in extreme circumstances to defend vital

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2 Ibid., VIII.

3 U.S. House of Representatives, "Statement of David Trachtenberg Deputy Under Secretary of Defense for Policy Before the House Armed Services Subcommittee on Strategic Forces" (Washington, DC: Subcommittee on Strategic Forces, March 28, 2019),4, https://armedservices.house.gov/_cache/files/1/8/18e23135-de55-4afc-89f1-7b7d78f8875d/615ECB6DC2411B11033CF239647F01CB.hmtg-116-as29-wstate-trachtenbergd-20190328.pdf.

4 Department of Defense, "Dangers of a Nuclear No First Use Policy" (Washington, DC: Department of Defense, 2019), https://media.defense.gov/2019/Apr/01/2002108002/-1/-1/1/DANGERS-OF-A-NO-FIRST-USE-POLICY.PDF.

> interests. Such a policy would not decrease nuclear dangers but would potentially increase them by undermining deterrence of adversaries and eroding assurance of allies and partners.[5]

Finally, in response to questions surrounding nuclear weapons policy from the House Armed Services Committee and the Senate Armed Services Subcommittee on Strategic Forces in the spring of 2020, Assistant Secretary of Defense Mercado and Deputy Assistant Secretary of Defense Soofer said:

> The fundamental purpose of our nuclear arsenal is to deter strategic attack. The United States would only consider employing nuclear weapons in the most extreme circumstances to defend our vital interests and those of our allies and partners. A credible and effective U.S. nuclear deterrent denies potential adversaries the confidence that they can coerce the United States, its allies, or its partners with the threat of nuclear employment to enable non-nuclear attack.[6]
>
> To preserve deterrence and the assurance of allies and partners, the United States has never adopted a "no first use" policy and, given the contemporary threat environment, such a policy is not justified today. U.S. policy is to retain some calculated ambiguity regarding nuclear employment.[7]

Foundational support for U.S. nuclear policy is found in the 2018 National Defense Strategy (NDS); specifically, the 2018 NPR's nuclear employment strategy aligns with the following strategic concept:

> *Be strategically predictable, but operationally unpredictable*. Deterring or defeating long-term strategic competitors is a fundamentally different challenge than the regional adversaries that were the focus of previous strategies. Our strength and integrated actions with allies will demonstrate our commitment to deterring aggression, but our dynamic force employment, military posture, and operations must introduce unpredictability to adversary decision-makers.[8]

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5 United States Senate, "Senate Armed Services Committee Advance Policy Questions for Dr. Mark T. Esper Nominee for Appointment to be Secretary of Defense" (Washington, DC: Senate Armed Services Committee, July 16, 2019), 67–68, https://www.armed-services.senate.gov/imo/media/doc/Esper_APQs_07-16-19.pdf.

6 U.S. House of Representatives, "Victorino Mercado, Assistant Secretary of Defense, Response to Congressional Inquiry on Fielding of W76-2 Low-Yield Submarine Launched Ballistic Missile Warhead" (Washington, DC: House Armed Services Committee March 26, 2020).

7 U.S. Senate, "Presentation of Rob Soofer, Deputy Assistant Secretary of Defense for Nuclear and Missile Defense Policy, to the Senate Armed Services Subcommittee on Strategic Forces" (Washington, DC: Armed Services Subcommittee on Strategic Forces, April 28, 2020).

8 Department of Defense, *Summary of the 2018 National Defense Strategy of the United States of America: Sharpening the Military's Competitive Edge* (Washington, DC: Office of the Secretary of Defense, 2018), 5, https://dod.defense.gov/Portals/1/Documents/pubs/2018-National-Defense-Strategy-Summary.pdf.

In addition, the 2018 NDS articulates the need for U.S. nuclear force structure and policy to address current adversary approaches:

> The Department will modernize the nuclear triad—including nuclear command, control, and communications, and supporting infrastructure. Modernization of the nuclear force includes developing options to counter competitors' coercive strategies, predicated on the threatened use of nuclear or strategic non-nuclear attacks.[9]

2010 Nuclear Posture Review

Rewinding one decade, the conclusions of the 2010 NPR list the following principles to guide U.S. nuclear policies, including declaratory policy (*italics added*):

> The United States will meet its commitment under Article VI of the NPT to pursue nuclear disarmament and will make demonstrable progress over the next five to ten years. We will work to reduce the role and numbers of U.S. nuclear weapons while enhancing security for ourselves, and our allies and partners.
>
> The United States will continue to strengthen conventional capabilities and reduce the role of nuclear weapons in deterring non-nuclear attacks, with the objective of making deterrence of nuclear attack on the United States or our allies and partners the sole purpose of U.S. nuclear weapons.
>
> The United States would only consider the use of nuclear weapons in extreme circumstances to defend the vital interests of the United States or its allies and partners.
>
> The United States will not use or threaten to use nuclear weapons against non-nuclear weapons states that are party to the NPT and in compliance with their nuclear non-proliferation obligations.[10]

2009 Bi-Partisan Congressional Commission on the Strategic Posture of the United States

Preceding the 2010 NPR was the 2009 Bi-partisan Congressional Commission on the Strategic Posture of the United States. One of the policy recommendations of that Perry-Schlesinger Commission was this prescription:

> …, the United States should retain calculated ambiguity as an element of its nuclear declaratory policy … calculated ambiguity creates uncertainty in the mind of a potential aggressor about just how the United States might

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9 Ibid., 6.

10 Department of Defense, *Nuclear Posture Review Report* (Washington, DC: Secretary of Defense, April 2010), 16–17, https://dod.defense.gov/Portals/1/features/defenseReviews/NPR/2010_Nuclear_Posture_Review_Report.pdf.

respond to an act of aggression, and this ought to reinforce restraint and caution on the part of that potential aggressor.… It [the United States] should not abandon calculated ambiguity by adopting a policy of no first use.[11]

[11] William J. Perry and James R. Schlesinger, *America's Strategic Posture: The Final Report of the Congressional Commission on the Strategic Posture of the United States* (Washington, DC: United States Institute of Peace, April 2009), 36–37, https://www.usip.org/sites/default/files/America's_Strategic_Posture_Auth_Ed.pdf.

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Appendix C.
Current Force Posture and Force Requirements

To clarify the assessment of the changes that a no-first use (NFU) policy might impose on force posture and force requirements, this appendix describes *current* U.S. force posture and force requirements. For a complete and accurate picture, the information provided here is supplemented by a classified annex.

U.S. military forces are postured to achieve the goals and strategic objectives laid out in the 2018 National Security Strategy and the National Defense Strategy (NDS). The NDS describes a "strategically predictable but operationally unpredictable" approach, based on Dynamic Force Employment and a Global Operating Model.[1] Summarizing the whole of U.S. force posture ("forces, footprints, and agreements"[2]) is beyond the scope of this paper. Suffice it to say that U.S. forces—assigned, allocated, and enabling units, personnel, and assets—are dispersed across the globe, at enduring and temporary locations, to execute a wide variety of missions. Establishing such a global footprint requires access, basing, transit, and other agreements with allies and partners. The global nature of the Joint Force is not a new concept; however, the "operationally unpredictable" characteristics of Dynamic Force Employment and the Global Operating Model impose additional requirements for a highly flexible and agile force capable of preparing and providing a tailored response to a crisis.

Posture of Strategic Nuclear Forces

The United States maintains a "triad" of strategic nuclear forces to deter nuclear and non-nuclear attack, assure allies and partners, achieve U.S. objectives if deterrence should fail, and hedge against an uncertain future. Forces operating in the air, at sea, and on land, geographically spread and stationed at various levels of alert, complicate adversary decision making and provide the flexibility required to execute a strategy of tailored deterrence.

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1 Department of Defense, *Summary of the 2018 National Defense Strategy of the United States of* America (Washington, DC: Office of the Secretary of Defense, 2018), 5, 7, https://dod.defense.gov/Portals/1/Documents/pubs/2018-National-Defense-Strategy-Summary.pdf. Dynamic Force Employment refers to a flexible, tailored application of forces, in which scalable, on-demand options are provided for priority missions while preserving capability and capacity for major combat.

2 Joint Chiefs of Staff, *Joint Planning*, Joint Publication 5-0 (Washington, DC: Office of the Chairman of the Joint Chiefs of Staff, 01 December 2020), V-12, G-1, https://www.jcs.mil/Portals/36/Documents/Doctrine/pubs/jp5_0.pdf?ver=ztDG06paGvpQRrLxThNZUw%3d%3d.

The U.S strategic nuclear force structure adheres to the central limits of the New Strategic Arms Reduction Treaty (New START), which caps the total number of deployed launchers: Intercontinental Ballistic Missiles (ICBMs), Submarine-Launched Ballistic Missiles (SLBMs), and heavy bombers at 700, the total number of deployed and non-deployed launchers at 800, and the total number of deployed warheads at 1,550. In a recent declaration of aggregate numbers of strategic offensive arms, the United States declared 675 deployed launchers, 800 deployed and non-deployed launchers, and 1,457 deployed warheads.[3]

Air-Breathing Strategic Deterrent

The air leg of the triad consists of the following long-range bombers equipped to deliver air-launched cruise missiles and gravity bombs.

The B-52H "Stratofortress" entered into force in 1961. Today, the Air Force Total Active Inventory (TAI) includes fifty-eight B-52s[4], assigned to the 5th Bomb Wing at Minot Air Force Base (AFB), North Dakota, and the 2nd Bomb Wing at Barksdale AFB, Louisiana. Of these, forty-six are nuclear-capable, and forty nuclear-capable B-52s are "deployed" under New START counting rules. Nuclear-capable B-52s can carry nuclear and conventional cruise missiles and a wide range of conventional ordnance, including precision-guided munitions.[5]

B-52s have limited ability to penetrate air defenses and therefore are primarily considered "stand-off" platforms, meaning that they launch weapons from outside enemy air defenses to remain effective. They can carry up to twenty Air Launched Cruise Missiles (ALCMs) that are armed with the W80-1 warhead. In the future, B-52s will also be equipped to carry the Long-Range Stand Off (LRSO) cruise missile and its associated W80-4 warhead.

Due to the age of the aircraft and increasing demands for its use, the full B-52 fleet will be refurbished in coming years. This refurbishment will include replacing the engines, equipping the aircraft for modern munitions (including hypersonic weapons), and upgrading avionics.

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3 Department of State, "New START Treaty Aggregate Numbers of Strategic Offensive Arms" (Washington, DC: Bureau of Arms Control, Verification, and Compliance, October 1, 2020), https://www.state.gov/new-start-treaty-aggregate-numbers-of-strategic-offensive-arms-12/.

4 TAI includes aircraft assigned to operating forces for mission, training, test, or maintenance functions (Department of the Air Force, *FY2021 Budget* Overview (Washington, DC: Department of the Air Force, February 10, 2020), https://www.saffm.hq.af.mil/Portals/84/documents/FY21/SUPPORT_/FY21%20Budget%20Overview_1.pdf?ver=2020-02-10-152806-743).

5 "B-52H Stratofortress," U.S. Air Force, Fact Sheet, December 16, 2015, https://www.af.mil/About-Us/Fact-Sheets/Display/Article/104465/b-52-stratofortress/.

The B-2A "Spirit" entered into force in 1993. The twenty B-2s in the Air Force inventory are operated out of the 509th Bomb Wing at Whiteman AFB, Missouri. B-2s are also multi-role bombers, capable of delivering conventional and nuclear munitions.[6]

B-2s possess low-observable (stealth) characteristics, which provide the capability to penetrate enemy air defenses and deliver gravity bombs. B-2 nuclear armaments include the B61-7, B61-11, and B83[7] gravity bombs. The B-2 will carry the B61-12 once that variant is fielded. It cannot carry ALCM or LRSO.

The B-21 "Raider," not yet deployed, is the next-generation long-range stealth bomber that will supplement, and then replace, elements of the nuclear and conventional bomber force.[8] The current plan calls for a minimum of 100 B-21s to enter into service in the mid-2020s.[9] While the bulk of the fleet would be assigned to non-nuclear missions, once deployed and certified for nuclear use, the B-21 will be able to deliver B61-12 gravity bombs and the LRSO cruise missile. The exact deployment date and operating bases for the B-21 are classified.

The bomber force is no longer on day-to-day alert. It requires time to "generate" the activities needed to assemble crews, load weapons, and cock aircraft before it is deemed ready to be employed on an operational nuclear mission. Once placed on alert, it takes additional time to launch, air refuel, penetrate air defenses or launch the stand-off weapon, and deliver the intended effects on target. Heavy bombers are therefore not considered "prompt" delivery vehicles but instead provide a visible display of force (which can be useful for signaling), can be dispersed, and provide the decision maker flexibility (since bombers may be recalled after launch if the international situation shifts).

Requirements for the bomber force, including generation timelines, are included in the classified annex.

Sea-Based Strategic Deterrent

The sea leg of the triad includes survivable ballistic missile submarines (SSBNs) equipped with SLBMs.

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6 "B-2 Spirit," U.S. Air Force, Fact Sheet, December 16, 2015, https://www.af.mil/About-Us/Fact-Sheets/Display/Article/104482/b-2-spirit/.

7 Office of the Deputy Assistant Secretary of Defense for Nuclear Matters, *Nuclear Matters Handbook 2020* (Washington, DC: Department of Defense, 2020), https://fas.org/man/eprint/nmhb2020.pdf.

8 Department of Defense, *Nuclear Posture Review (NPR) 2018* (Washington, DC: Office of the Secretary of Defense, February 2018), https://media.defense.gov/2018/Feb/02/2001872886/-1/-1/1/2018-NUCLEAR-POSTURE-REVIEW-FINAL-REPORT.PDF.

9 Office of the Deputy Assistant Secretary of Defense for Nuclear Matters, *Nuclear Matters Handbook 2020*.

The United States currently operates fourteen **Ohio-Class SSBNs**, twelve of which are deployed and loaded with missiles/warheads (as roughly two are in some state of maintenance/overhaul at any given time).[10] The Pacific Fleet SSBN force operates out of Naval Base Kitsap in Bangor, Washington, and the Atlantic Fleet operates out of Naval Submarine Base Kings Bay in Kings Bay, Georgia. [11] The number of submarines assigned to each fleet and their patrol areas vary given targeting objectives and constraints.

Each Ohio-Class SSBN carries twenty Trident II (D5) SLBMs, in compliance with New START limits. The D5 SLBMs are currently undergoing a life extension (D5 LE1) that will keep the missiles operational through the remainder of the Ohio-Class SSBN service life.[12] Each D5 SLBM can carry up to eight warheads, and it is compatible with three variants of the W76 (original W76-0, life-extended W76-1, and low-yield W76-2) and the W88.[13]

The Navy plans to begin retiring Ohio-Class SSBNs in 2027, with the end-of-life determined for each hull on a case-by-case basis.[14] The Ohio-Class SSBNs will be replaced by twelve **Columbia-Class SSBNs**, a new design expected to be fielded starting in 2031.[15] Each Columbia-Class SSBN will be capable of carrying sixteen SLBMs, initially the same D5 LE1 as carried by the Ohio-Class SSBNs. During the Ohio-Columbia transition, fewer SSBNs will be available for deployment than typically assigned.

To equip the Columbia-Class SSBN throughout its entire lifetime, the D5 LE1 will need to undergo another life-extension. The replacement SLBM—D5 LE2—will also incorporate the W93 warhead, a new program announced in the National Nuclear Security Administration (NNSA) Fiscal Year (FY) 21 budget request.[16]

Requirements for the SSBN force, including positioning and generation details, are included in the classified annex.

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10 Amy F. Woolf, "Defense Primer: Strategic Nuclear Forces," *In Focus*, December 3, 2020, https://crsreports.congress.gov/product/pdf/IF/IF10519.

11 Submarine Group 9 and Submarine Group 10 are responsible for administrative control, organizing, training, and equipping the SSBN force. See Submarine Force Pacific, "Submarine Group 9," https://www.csp.navy.mil/csg9/; Commander, Submarine Force Atlantic, "Commander, Submarine Group 10," https://www.sublant.usff.navy.mil/CSG10/.

12 Amy F. Woolf, "Defense Primer."

13 Congressional Research Service, *U.S. Strategic Nuclear Forces: Background, Developments, and Issues*," RL33640 (Washington, DC: Congressional Research Service, Updated 27 April 2020), https://fas.org/sgp/crs/nuke/RL33640.pdf.

14 Amy F. Woolf, "Defense Primer."

15 Ibid.

16 "FY 2021 Presidential Budget Justification," U.S. Department of Energy, https://www.energy.gov/cfo/downloads/fy-2021-budget-justification.

Land-Based Strategic Deterrent

The land leg of the triad is comprised of 400 ICBMs dispersed across 450 underground launch facilities (or silos) spread across the upper Midwest and Western United States at the 341st Missile Wing at Malmstrom AFB, Montana,[17] the 91st Missile Wing at Minot AFB, North Dakota,[18] and the 90th Missile Wing at F. E. Warren AFB, Wyoming.[19] In addition to the personnel required to operate and maintain the **Minuteman III** weapon system, each wing is also host to Security Forces responsible for patrolling, securing, and defending the missile fields, weapons storage, and maintenance operations areas.

The **Minuteman III** ICBMs are stored in hardened silos and connected to an underground launch control center (LCC) through a system of hardened cables.[20] Each Minuteman III ICBM carries one warhead (W78 or W87-0), but the Air Force retains the option to upload additional warheads should the security environment change and/or if directed by the President.[21]

The **Minuteman III** missiles were initially deployed in 1970, and have since undergone several upgrades and a life-extension program. Beginning in 2029, they will be replaced by the Ground Based Strategic Deterrent (GBSD). During this transition, the launch facilities and associated infrastructure will also be refurbished, and the ICBM command and control infrastructure will be modernized. GBSD will be armed with the W87-1 warhead, to "provide enhanced safety and security compared to the legacy W78."[22]

A high percentage of the ICBM force is on-alert 24 hours a day, 7 days a week. "On-alert" means that the LCCs are staffed at all times and that the procedures for launch are regularly exercised to maintain proficiency. While it is true that the United States maintains the ability to launch ICBMs after an incoming attack has been detected and confirmed but before absorbing a strike, commonly referred to as "Launch Under Attack," the missiles are not, as frequently claimed, on "hair-trigger" alert. As described in recent Institute for

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17 "341st Missile Wing," Malmstrom Air Force Base, Fact Sheet, May 4, 2012, https://www.malmstrom.af.mil/About-Us/Fact-Sheets/Display/Article/346869/341st-missile-wing/.

18 "91st Missile Wing," Minot Air Force Base, Fact Sheet, April 14, 2011, https://www.minot.af.mil/About-Us/Fact-Sheets/Display/Article/264267/91st-missile-wing-minot-air-force-base/.

19 "90th Missile Wing Fact Sheet," F. E. Warren Air Force Base, February 27, 2018, https://www.warren.af.mil/About-Us/Fact-Sheets/Display/Article/331279/90-mw-fact-sheet/.

20 "LGM-30G Minuteman III," Air Force Nuclear Weapons Center, Fact Sheet, January 17, 2020, https://www.afnwc.af.mil/About-Us/Fact-Sheets/Article/2059979/lgm-30g-minuteman-iii/.

21 Office of the Deputy Assistant Secretary of Defense for Nuclear Matters, *Nuclear Matters Handbook 2020*.

22 "W87-1 Modification Program," National Nuclear Security Administration, Fact Sheet, March 2019, https://www.energy.gov/sites/prod/files/2019/03/f60/2019-03-08-FACTSHEET-W87-1.pdf.

Defense Analyses (IDA) research on Presidential Decision time,[23] "[a]ny instance of U.S. nuclear employment would be the product of three phases: 1) situation assessment; 2) course of action (COA) development and evaluation; and 3) direction of the force." These three phases are described briefly as follows; see the relevant chapter from the study for additional detail.[24]

- **Situation assessment** involves combining information from U.S. warning sensors and human judgement to determine whether there is a threat against the U.S. or its allies or partners. To identify and eliminate false alarms, incoming signals must satisfy dual-phenomenological criteria, meaning that the event must be confirmed by "two independent information sources using different physical principles, such as radar and infrared satellite sensors."[25] Human analysts also process the warning data, and factor in the current security environment/international situation to assess the likelihood that the warning data are accurate. A conference is convened to assess the potential threat, where the warning data and attack assessment are supplemented by intelligence reporting, operational reporting from Combatant Commands, and other relevant information.
- **COA development and evaluation** describes the process in which policymakers and military planners develop potential nuclear and non-nuclear responses. COAs can be adapted from pre-planned options or developed from scratch. During COA development and evaluation, the president can consult with advisors, repeatedly if necessary, via secure conferences.
- **Direction of the Force** refers to the transmission of authenticated orders to employ nuclear weapons. Force direction is carried out via the nuclear command, control, and communications (NC3) system, which ensures that U.S. nuclear weapons will only operate under positive control, meaning only when ordered by the president and only in the manner intended. For instance, an authentication code from a valid launch order is required to enable ICBMs for

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[23] William A. Chambers et al., *Presidential Decision Time Regarding Nuclear Weapons Employment: An Assessment and Options*, IDA Document D-10655 (Alexandria, VA: Institute for Defense Analyses, June 2019).

[24] This three-phased process is followed by the other two legs of the triad as well, but it is highlighted here due to common misconceptions regarding the ICBM alert posture.

[25] Office of the Deputy Assistant Secretary of Defense for Nuclear Matters, *Nuclear Matters Handbook 2020*.

launch, and, in the event of an attempt at an unauthorized launch, one of the several LCCs connected to each missile squadron will initiate "inhibit launch" commands.[26]

Finally, the United States maintains a practice of "open-ocean" targeting, meaning that ICBMs are not targeted at any country in particular on a day-to-day basis. All together, these policies and practices make it unlikely that a false alarm or other error could trigger an inadvertent ICBM attack on another country.

More detailed requirements for the ICBM force are included in the classified annex.

NC3

The NC3 system ensures the president's ability to exercise nuclear command and control (NC2), the authority and direction, through established command lines, of nuclear weapon operations.[27] The NC3 system includes warning systems, communications systems, fixed and mobile command posts, and control centers for nuclear systems, working together to perform five critical functions:[28]

- Detection, warning, and attack characterization;
- Nuclear planning;
- Decision making and conferencing;
- Receiving presidential orders; and
- Enabling the management and direction of forces.

The fundamental requirements of NC2 are that it must be assured, timely, secure, survivable, and enduring in peacetime and wartime throughout the crisis spectrum.[29] Summarizing the full suite of requirements for all NC3 systems is beyond the scope of this report.

Additional information about select NC3 requirements relevant to adoption of an NFU policy is included in the classified annex.

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[26] Office of the Secretary of Defense Nuclear and Missile Defense Policy, "The Importance of the Nuclear Triad," November 2020, https://media.defense.gov/2020/Nov/24/2002541293/-1/-1/1/FACTSHEET-THE-IMPORTANCE-OF-MODERNIZING-THE-NUCLEAR-TRIAD.PDF.

[27] Office of the Deputy Assistant Secretary of Defense for Nuclear Matters, *Nuclear Matters Handbook 2020*.

[28] Department of Defense, *Nuclear Posture Review (NPR) 2018*.

[29] Office of the Deputy Assistant Secretary of Defense for Nuclear Matters, *Nuclear Matters Handbook 2020*.

Posture of Non-Strategic Nuclear Forces

Until recently, the sole U.S. non-strategic[30] nuclear weapons were B61 gravity bombs carried by F-15E *Strike Eagle* dual-capable aircraft (DCA), forward-deployed to Europe to support combined-theater nuclear operations with the North Atlantic Treaty Organization (NATO).[31] NATO allies also provide DCA that are capable of carrying U.S. forward-deployed nuclear weapons. The details of which countries provide what support to the NATO nuclear mission are classified. **See the classified annex for more information regarding DCA force posture and force requirements**. If necessary, the United States has the ability to deploy DCA to other regions (e.g., Northeast Asia).[32]

The 2018 Nuclear Posture Review, citing the need to "enhance deterrence by denying potential adversaries any mistaken confidence that limited nuclear employment can provide a useful advantage,"[33] called for "supplemental capabilities": the development and fielding of a low-yield SLBM warhead and the development of options for a nuclear-armed sea-launched cruise missile (SLCM-N). The low-yield SLBM warhead W76-2, a modification of an existing SLBM warhead, was recently fielded[34] **(see the classified annex for additional details on W76-2 deployment)**. The development of SLCM-N, a new weapon system, is in the Analysis of Alternatives (AoA) stage of the Joint Capabilities Integration and Development System process. The AoA is expected to be completed in time to inform the FY22 Presidential Budget Request.[35]

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30 "Non-strategic" here refers to weapons that are either low-yield or short-range.

31 The United States is also incorporating nuclear capability onto the F-35, the replacement for the current aging DCA; however, those systems are not yet fielded. Initial fielding of nuclear-capable F-35 is planned for 2025 (see Office of the Deputy Assistant Secretary of Defense for Nuclear Matters, *Nuclear Matters Handbook 2020*).

32 Department of Defense, *Nuclear Posture Review (NPR) 2018*.

33 Ibid.

34 "Statement on the Fielding of the W76-2 Low-Yield Submarine Launched Ballistic Missile Warhead," U.S. Department of Defense, February 4, 2020, https://www.defense.gov/Newsroom/Releases/Release/Article/2073532/statement-on-the-fielding-of-the-w76-2-low-yield-submarine-launched-ballistic-m/.

35 U.S. House of Representatives, " Statement of Johnny Wolfe Vice Admiral Johnny Wolfe, USN Director, Strategic Systems Programs Before the Subcommittee on Strategic Forces of the House Armed Services Committee on FY 2021 Budget Request for Nuclear Forces and Atomic Energy Defense Activities" (Washington, DC: Subcommittee on Strategic Forces March 3, 2020), https://www.congress.gov/116/meeting/house/110593/witnesses/HHRG-116-AS29-Wstate-WolfeJ-20200303.pdf.

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Appendix F.
Abbreviations

A2/AD	anti access/area denial
AFB	Air Force Base
ALCM	Air Launched Cruise Missile
AoA	Analysis of Alternatives
CDRUSSTRATCOM	Commander, U.S. Strategic Command
CNAS	Center for a New American Security
COA	course of action
CSIS	Center for Strategic International Studies
DASD	Deputy Assistant Secretary of Defense
DCA	dual-capable aircraft
FY	Fiscal Year
GBSD	Ground Based Strategic Deterrent
ICBM	intercontinental ballistic missile
IDA	Institute for Defense Analyses
IISS	International Institute for Strategic Studies
LCC	launch control center
LLNL	Lawrence Livermore National Laboratory
LOW	launch on warning
LRSO	Long-Range Stand-Off
LUA	launch under attack
MDR	Missile Defense Review
NATO	North Atlantic Treaty Organization
NC2	nuclear command and control
NC3	nuclear command, control, and communications
NDAA	National Defense Authorization Act
NDS	National Defense Strategy
NFU	no-first use
NNSA	National Nuclear Security Administration
NNWS	non-nuclear weapons state
NPR	Nuclear Posture Review
NPT	Treaty on the Nonproliferation of Nuclear Weapons
NSNW	non-strategic nuclear weapons
NWS	nuclear weapons state
ORF	Observer Research Foundation
OSD	Office of the Secretary of Defense
PLA	People's Liberation Army
SLBM	sea-launched ballistic missile
SLCM-N	nuclear-armed sea-launched cruise missile

SME	subject matter expert
SSAC	Science of Second Artillery Campaigns
SSBN	ballistic missile submarines
START	Strategic Arms Reduction Treaty
TAI	Total Active Inventory
TLAM-N	Tomahawk Land Attack Missile – Nuclear
TR	Technical Report
U.S.	United States
U.S.S.R.	Union of Soviet Socialist Republics
USSTRATCOM	U.S. Strategic Command

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14. ABSTRACT

Section 1673 of the National Defense Authorization Act (NDAA) for Fiscal Year 2020 requires the Secretary of Defense to enter into a contract with a Federally Funded Research and Development Center (FFRDC) to conduct a study on the potential ramifications of U.S. adoption of a no-first use (NFU) policy, whereby a nuclear power pledges not to employ nuclear weapons except in response to an adversary's nuclear attack. Through policy research and analysis, extensive consultation with and interviews of subject matter experts (SMEs), classified methodologies, and subsequent synthesis, the Institute for Defense Analyses (IDA) illustrates how a significant reduction in the long-standing level of strategic ambiguity in U.S. declaratory policy regarding the potential employment of nuclear weapons might impact U.S. force posture, the views of U.S. allies, the views of U.S. adversaries and the risk of miscalculation, and nuclear nonproliferation. IDA concludes that U.S. adoption of an NFU policy will not bring about a setting that is more conducive to positive behavior by adversaries or to strengthened relations with allies. In light of existing constraints on U.S. policy and procedure governing nuclear use, the weight of the evidence indicates significant potential for NFU to impart more harm than good.

15. SUBJECT TERMS

No-first use; nuclear weapons; deterrence; declaratory policy; nuclear strategy; arms control

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