



Rethinking US Nuclear Posture

Active Learning Simulation

Welcome to “Rethinking US Nuclear Posture,” an active learning experience created by Daisy Alliance. Through this simulation, you will

- Gain experience in applying international relations concepts to practical situations;
- Gain experience in intra- and inter-group negotiations;
- Strengthen your understanding of key nuclear weapons issues and the role nuclear weapons play in global security and power structures; and
- Strengthen your understanding of different perspectives and frameworks in international relations and nuclear postures.

The Scenario

The newly elected US president has created the President’s Commission on US Nuclear Posture. You will roleplay a representative from the United States, humanitarian initiative, or civil society. Your goal is to create a set of recommendations for the US president that will help the United States reduce its reliance on nuclear weapons and signal to the international community that the United States is willing to make a serious commitment to the global nuclear nonproliferation and disarmament regime.

This learning package includes an issue guide to provide you with an overview of the issue under consideration, recommended resources to give you a deeper understanding and more nuanced perspective, and a role guide detailing the perspectives of the United States, humanitarian initiative, and civil society, and their key interests. Some questions you will want to consider as you work through this simulation include the following:

- What changes can the United States make to its nuclear posture to reduce the humanitarian threat posed by nuclear weapons?
- How should the concept of security be framed? Is human security more important than the traditional state-centric model?
- How prominent a role should nuclear weapons play in US security policy? Do nuclear weapons have the utility to address 21st-century threats, such as cyberattacks? In what ways do nuclear weapons pose challenges to peace?
- What are the implications of maintaining a nuclear posture and strategy that emphasizes deterrence and damage limitation?
- What are the effects of nuclear weapons on vulnerable populations? Consider not just the use of these weapons, but their production, maintenance, storage, and testing as well.
- Should the United States be more concerned with global disarmament than with nonproliferation? What role should arms control agreements such as the Nuclear Nonproliferation Treaty (NPT) play in US calculations?

Your goal is to create a set of recommendations that will help the United States reduce its reliance on nuclear weapons and signal willingness to make a commitment to nonproliferation.

What Is the Issue?

While global support is surging for the prohibition and total elimination of nuclear weapons, the United States still possesses an arsenal of 3,800 nuclear warheads. All parts of the US nuclear arsenal are currently undergoing modernization, with the goal of creating weapons that are more accurate, capable of evading an adversary's defense, and capable of fielding both conventional and nuclear warheads. Additionally, the United States is developing new nuclear weapons and delivery systems, such as nuclear-armed low-yield submarine-launched cruise missiles (SLCM-Ns) and nuclear air-launched cruise missiles (ALCMs). While the United States has had a moratorium on explosive nuclear weapons testing since 1992 and has signed (but not ratified) the Comprehensive Nuclear Test Ban Treaty (CTBT), the Trump administration considered renewing nuclear testing. In 2020, the Senate Armed Services Committee included \$10 million in its version of the FY21 National Defense Authorization Act to speed up preparations if the United States decided to conduct a nuclear test, although this provision was later dropped.

Nuclear weapons still feature prominently in US security policy. The Trump administration's 2018 Nuclear Posture Review's (NPR) stated goals for US nuclear posture are to deter against nuclear and nonnuclear attack, provide assurances to allies and partners, achieve US objectives if deterrence fails, and have the capacity to hedge against an uncertain future. The 2018 NPR also clarifies that the president needs flexibility and the ability to tailor deterrence to specific adversaries (DoD 2018). The Biden administration released the declassified version of its NPR to the public on October 27, 2022. While similar in tone to the Obama administration's NPR, there is still a substantial reliance on nuclear weapons as a key part of US national security policy. However, there were several key changes. First, the Biden administration's NPR canceled the SLCMs called for under the Trump administration's NPR, although Congress may still choose to fund the weapon. Second, it also retired the B83-1 megaton gravity bomb. Finally, it removed "to hedge against an uncertain future" as part of the stated goals.

There are challenges to both security and peace that come along with this strategy. As long as nuclear weapons exist, there is the chance of detonation, either by accident, by miscalculation, or on purpose.

The detonation of a nuclear weapon anywhere could have catastrophic humanitarian consequences, including massive loss of life and widespread destruction. No state or international organization has the capacity to provide immediate humanitarian assistance or to address the long-term consequences. Even if states do not intend to use nuclear weapons, accidents can happen. There have been many close calls over the years. In 1995, for example, Russian early warning systems detected what they interpreted as an incoming US ballistic missile; it turned out to be a Norwegian scientific rocket. Fearing a larger attack, Russian nuclear forces went on full alert. Fortunately, radar showed no additional launches, leading Russian officials to declare a false alarm, preventing a retaliatory attack.¹

The outsized US nuclear arsenal also creates challenges for global disarmament. China, for example, is unwilling to participate in nuclear talks because the United States and Russia have significantly larger arsenals. US modernization of its nuclear arsenal increases the potential for arms races. Some experts argue that China is increasing the size of its nuclear arsenal, transitioning to a nuclear triad, and developing hypersonic glide vehicle (HGV) technology to hedge against a US first strike and maintain its assured second-strike capability. Misperception can also heighten tensions, leading to the possibility of nuclear strikes.

As a global leader, it is incumbent on the United States to also be a leader in the international nuclear non-proliferation and disarmament regime. The key issue here is that the United States' massive nuclear weapons arsenal and nuclear posture are inconsistent with the growing international antinuclear norm. While no one expects that the United States will completely disarm in the near future, there are steps that can be taken now to reduce the likelihood of miscalculation and accident and put the United States on the path to total nuclear disarmament without compromising US security. It is important for the United States to signal to the international community that it is serious about fully committing to the global elimination of nuclear weapons.

¹ See *Union of Concerned Scientists*, "Close Calls with Nuclear Weapons" (www.ucsusa.org/resources/close-calls-nuclear-weapons) for more examples of miscalculation and accident.

I. US Nuclear Posture

The United States communicates its nuclear posture, or approach to US nuclear weapons policy, via the NPR. This document considers what role nuclear weapons should play in US security overall and the corresponding strategy, doctrine, and force structure. Since the Clinton administration created the first NPR in 1994, every president has conducted one.

I.A. Posture Objectives

US security policy is situated within the traditional Western-oriented national security paradigm, which focuses on external security threats to the United States, such as preventing attacks by an adversary. The primary stated objective of the US nuclear arsenal is deterrence—that is, preventing both conventional and nuclear attacks by threatening costly, credible retaliation. While different administrations have placed greater or lesser emphasis on nuclear weapons, ultimately these weapons remain central to US security. Compellence is a secondary objective—the US nuclear arsenal lends credibility to threats of force intended to coerce other actors. Additionally, the United States provides extended deterrence commitments to some allies, such as NATO countries, Australia, Japan, and South Korea, promising that it will retaliate in the event of a nuclear attack on those countries. These allies are said to be covered by the US “nuclear umbrella,” and so they do not need to have their own nuclear arsenals.

One of the challenges to deterrence theory is that it is predicated on several assumptions about how countries interact with each other, key among them rationality. Deterrence is supposed to work, because a rational actor would be dissuaded from attacking because the cost significantly outweighs any reward. However, there is no guarantee that all actors are rational, and even for rational actors, accident or miscalculation can happen. The close calls that have happened over the years with the United States and Russia are excellent examples of this—rationality would dictate that an incoming strike must be retaliated against, immediately before one’s forces are destroyed, with only 15 minutes to determine the accuracy of attack reports. Rational decisionmaking also assumes perfect information, but deterrence is characterized by imperfect information. Misperception of an adversary’s intentions could lead to accidental or deliberate nuclear use. It is also important to consider what types of attacks the

United States is trying to deter. Nuclear weapons are not necessarily useful for deterring some of the key international threats that exist today, such as cyberattacks or terrorism.

Some argue that changes to existing US nuclear doctrine, such as reducing force size or altering the conditions under which the United States would consider using nuclear weapons, potentially reduces allies’ confidence in US security assurances. However, establishing credibility for those assurances has always been complicated, because using nuclear weapons to retaliate on behalf of an ally could lead to further retaliation against the US mainland. Some analysts believe that removing nuclear weapons from the equation would actually make US security assurances to its allies more credible, because following through on them would not be as high a risk for the United States.

Supporters of current US nuclear policies argue that if allies cannot rely on the US nuclear umbrella (or perceive that they cannot), they may decide to build their own nuclear arsenals. More nuclear weapons combined with more possessors inherently creates a greater risk, either through deliberate use, accident, or

The Nuclear Posture Review considers what role nuclear weapons should play in US security overall.

miscalculation. However, the likelihood of a US ally deciding to pursue its own nuclear arsenal is relatively low, because the costs of doing so would be high economically, politically, and diplomatically. In addition, changes in US nuclear posture could be compensated for by conventional alternatives that might also be more credible than threatening to use nuclear weapons on behalf of an ally.

US nuclear policy also incorporates the idea of damage limitation, which differs somewhat from deterrence. While the endgame is still to deter attacks on the United States, the purpose of damage limitation is to significantly reduce the amount of damage an adversary can inflict on the United States in the event of a nuclear exchange. The logic is that if an adversary

knows the United States has this ability, it will make the adversary less likely to launch an attack, thus helping to enhance deterrence. There are offensive and defensive methods of damage limitation—using a counterforce to preemptively take out an opponent’s weapons offensively or using missile defense defensively to intercept incoming missiles. To be effective, counterforce attacks must eliminate or significantly reduce an adversary’s second-strike capabilities, and so require a large, flexible, and highly accurate nuclear force. Proponents of damage limitation argue that it is necessary to have a reserve strategy in case deterrence fails. By reducing the certainty of retaliatory attacks, damage limitation can reduce the likelihood of a nuclear attack by an adversary and enhance the credibility of US deterrence.

Emphasizing damage limitation also comes with disadvantages, namely exorbitant cost and increased risk of an arms race. On the offensive side, any moves to build more powerful or technologically advanced nuclear weapons may prompt opponents to build up their own nuclear arsenals or pursue other asymmetrical capabilities. A nuclear arms race would cost the United States trillions of dollars, adding to the more than \$1 trillion already spent on modernizing the existing nuclear arsenal. It would also increase the risk that a nuclear weapon might be used.

In addition, by pursuing the ability to destroy a potential adversary’s nuclear arsenal, the United States creates a perverse incentive for that adversary to use those weapons before they can be destroyed. This is a destabilizing dynamic, making nuclear conflict more rather than less likely, as the compressed timeframe for decisionmaking increases the chances that an adversary may act on inaccurate or incomplete information to avoid losing their chance to act altogether. Arms races can also affect perception, leading to miscalculations and accidents.

Another consideration is the feasibility of a damage limitation strategy. It is almost impossible to accurately calculate how many weapons are enough to provide an assured destruction capability. In the case of the United States and Russia, each of which have thousands of sophisticated warheads available, significant damage limitation is simply not feasible. Additionally, counterforce attacks are only possible if a country knows where its opponents’ nuclear weapons are located. While it may be possible to take out an opponent’s silo-based missiles, which are stationary, these silos are hardened and would each have to be targeted with multiple warheads, meaning that such an attack would require using

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a significant portion of a state’s available arsenal. And that would still leave an adversary’s submarines and mobile missiles, whose locations may not be known with great enough precision to destroy. The United States and Russia both have a significant portion of their nuclear arsenals deployed using such mobile delivery systems. China has recently been expanding its road-mobile missile force and constructed 300 new missile silos. Some experts speculate that silo construction is to hedge against preemptive US attacks, as the new silos are being constructed outside the range of US conventional weapons, and thus are less vulnerable to US attack. It is also possible that only some silos will house ballistic missiles in an effort to confuse adversaries (Korda and Kristensen 2021).

Missile defense presents a particular challenge, because while the United States views it as defensive, adversaries may view it as offensive. The United States could conceivably launch a first strike to destroy the majority of an adversary’s forces, then use missile defense to prevent retaliatory attack. From this view, missile defense is as much about increasing relative power as it is about defending against attacks. The United States, however, does not currently have missile defenses capable of significantly limiting damage from a major strategic nuclear attack and there are serious questions about whether this will ever be feasible, since opponents can add many types of countermeasures to their missiles to undermine defenses. However, both China and Russia are concerned that future technological advancements will change those calculations and feel that they must therefore take missile defenses into consideration in their decisionmaking about nuclear forces and strategy. China and Russia are developing

new technologies, such as HGVs, although whether their intention is to evade US missile defense is debatable. HGVs fly at a lower altitude and higher speed than ballistic missiles, and they approach on a less predictable path. While HGVs are still detectable by US radar systems (Negin 2021), “it would be more difficult to predict the intended target and to direct missile defense interceptors toward the attacking HGV” (CRS 2022b).

I.B. Declaratory Policy

Declaratory policy indicates the conditions under which a country is willing to use nuclear weapons against an adversary. The existing US declaratory policy states, “The United States will only consider the employment of nuclear weapons in extreme circumstances to defend the vital interests of the United States, its allies, and partners” (DoD 2018 p. VIII). Critics of this policy argue that it is vague and does not define extreme circumstances or vital interests. Many experts have called for the United States to implement a no-first-use policy (NFU), which was considered and ultimately rejected by the Obama administration.

NFU is exactly what it sounds like—the United States would publicly state that it would use nuclear weapons only if it (or its allies) was attacked with nuclear weapons. Proponents of NFU argue that it is a necessary step to global nuclear disarmament. Although the United States has a *de facto* NFU, a clearly stated NFU would strengthen the nonnuclear-weapons-use norm and contribute to nonproliferation efforts. An NFU would also decrease opportunities for accidents and miscalculation. Because conventional and nuclear weapons are not easily distinguishable, NFU would signal to adversaries that any preemptive attacks would be conventional, rather than nuclear. This reduces the risk of escalation and of an adversary launching its own nuclear weapons to hedge against a possible incoming nuclear attack, a use-it-or-lose-it mentality.

Many US allies and domestic groups, however, strongly oppose NFU. For such a commitment to be credible, the United States would need to change more than just its declaratory policy. Corresponding reductions in both nuclear and conventional forces would be necessary, so that adversaries would not perceive that NFU is simply lip service. This may be difficult to do: for example, even though China has maintained an NFU policy since it completed its first nuclear test, and

it has a force structure that corresponds with this policy (e.g., a relatively small nuclear arsenal, no ability to launch on warning, and warheads stored separately from missiles), the United States still frequently accuses it of being insincere about its NFU. An NFU declaration would also limit the range of policy options available to the United States in response to a potentially catastrophic, but nonnuclear, threat, such as a chemical, biological, or cyber attack. US allies are concerned that such a policy would weaken extended deterrence commitments and could increase the chances of conventional attacks against them.

Other options proposed include a sole purpose doctrine and an existential threat policy. A sole purpose doctrine would state that the United States would use nuclear weapons only to deter or defeat the use of nuclear weapons by adversaries, ruling out nuclear use against conventional attacks. With an existential threat policy, the United States would clearly state it would only use nuclear weapons if no viable alternatives exist to prevent an existential attack on the US and its allies. The option to use nuclear weapons would be reserved to respond to certain types of conventional weapons or nonnuclear weapons of mass destruction.

I.C. Force Posture

Estimates put the US nuclear stockpile at 5,430 total nuclear warheads, with approximately 3,700 active nuclear warheads, although some of these are in storage for loading onto missiles and aircraft as needed.² The remaining 1,720 warheads are retired and awaiting dismantlement. The United States also deploys approximately 100 tactical bombs in Europe.

In 2016, in exchange for Senate ratification of the New Strategic Arms Reduction Treaty (New START), the Obama administration initiated a large-scale program to upgrade the US nuclear arsenal, including delivery systems; warheads; and command, control, and communications (NC3). Modernization extends the life of US nuclear weapons and helps to maintain a strong deterrent. The 2010 NPR stated that the United States would not engage in new testing, warhead design, or military capabilities as part of the modernization program. Although the Trump administration continued with its predecessor’s modernization plan, the 2018

² *Approximately 1,800 are deployed, 1,400 on ballistic missiles and 300 at strategic bomber bases (Kristensen and Korda 2021).*

NPR abandoned the US commitment not to develop new warheads or military capabilities, instead arguing that changes in international security circumstances now required the need for a flexible and varied range of options to “tailor” US deterrence options. To meet this need, the 2018 NPR introduced the development of new types of weapons. President Biden’s recent budget request for FY2023 appears to continue to plan for the development of new warheads. This is a major change—the United States has not developed new warheads since the late 1980s, choosing instead to extend the life of its warheads through life extension programs.

The US nuclear arsenal, known as the nuclear triad, has three legs: ground-based, sea-based, and air-based delivery systems. Credible deterrence relies on having second-strike capability, or the ability to reliably respond to an attack. If a nuclear armed adversary were to attack the United States, the United States would want to ensure that some of its nuclear weapons survive. The need for a second-strike capability is used to justify the nuclear triad—if the US ground leg of the nuclear triad is wiped out in an attack, the United States would still have nuclear weapons aboard submarines and nuclear bombs that can be delivered by airplanes.

Realistically, only Russia has even a nominal capacity to threaten a disarming first strike on the United States, as China’s long-range conventional and nuclear capabilities are far too limited to consider such a strike, even if it significantly expands its arsenal. In addition, US submarines are essentially invulnerable once at sea, providing an assured second-strike capability and undermining the case for maintaining other legs of the triad. This has led many experts to argue that inter-continental ballistic missiles (ICBMs) should be

retired. Not only are they redundant, but, because they are vulnerable to attack and therefore kept on high alert, they are unnecessarily dangerous.

Ground Leg

The ground leg of the US triad consists of silo-based ICBMs carrying nuclear warheads. ICBMs are deployed in hardened underground silos in multiple locations throughout the Plains states. These weapons are responsive, can reach their targets within about half an hour, and remain on high-alert readiness so they can be launched within minutes of an order to do so, prior to an impending attack. The United States has approximately 400 deployed Minuteman III (MMIII) ICBMs, carrying one warhead each, either the 300-kiloton (KT) W87 warhead or the 335 KT W78 warhead (Kristensen and Korda 2021).³

As part of the modernization program, ICBMs have undergone a life extension program over the past 15 years to extend the life of the missiles to 2030. While a second life extension is possible, the United States instead intends to replace the current ICBM force after 2030 with the Ground Based Strategic Deterrent (GBSD). The GBSD consists of LGM-35A Sentinel missiles, with one warhead per missile planned, although they could potentially carry two or three warheads. These missiles are lighter than the MMIII ICBMs, allowing them to carry greater payloads and providing more flexibility (CRS 2022a). The new missiles are also expected to have a greater range than the MMIII. The United States is also in the process of replacing W78 warheads with new, more powerful W87-1 warheads (Kristensen and Korda 2021).

Sea Leg

The sea leg consists of nuclear-powered missile submarines (SSBNs) armed with submarine-launched ballistic missiles (SLBMs) carrying nuclear warheads. SSBNs are mobile and hard to detect, making SLBMs highly survivable. The United States maintains a fleet of 14 Ohio-class SSBNs, of which 12 are operational and four to five believed to be on hard alert, meaning they can be used on relatively short notice. Each sub carries 20 Trident II D5 SLBMs, typically armed with four to

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³ *Minuteman ICBMs are capable of carrying two to three independently targetable warheads. The Obama administration removed additional warheads.*

five warheads, although each missile can carry up to eight warheads (Kristensen and Korda 2021). Beginning in 2030, Ohio-class SSBNs will be replaced with Columbia-class SSBNs, which will carry up to 16 SLBMs (ACA 2022) and are expected to be significantly quieter (Kristensen and Korda 2021). As of 2017, the Trident II D5 missiles have been undergoing life extension and upgrades, including the addition of new guidance systems that provide increased flexibility and accuracy. In late 2019, the United States began deploying new, low-yield W76-2 warheads on SSBNs, and it also plans to develop a new SLBM warhead, the W93, although funding was not authorized in 2021 (Kristensen and Korda 2021). The Biden administration's budget calls for canceling a new SLCM-N that was initiated by the Trump administration, but support from some military officials and members of Congress means that the program's fate is still undecided and it looks likely to go forward at some level for at least the next year.

Air Leg

The air leg consists of bombers armed with gravity bombs and ALCMs carrying nuclear warheads. The air leg provides flexibility and a clear and visible signal of US intent. The US has 20 B-2A bombers, all of which are nuclear capable, and 87 B-52H bombers, of which 46 are nuclear capable; approximately 60 bombers are assigned to nuclear missions (Kristensen and Korda 2021). Bombers are armed with B61 gravity bombs and AGM-86 ALCMs, which each ALCM carrying one warhead. Approximately 200 ALCMs are deployed (ACA 2022). The command and control of existing bombers is being upgraded and there are plans to purchase new dual-capable long-range B-21 bombers that will have greater capability to penetrate air defenses. The life of the B61 gravity bombs is being extended, with four existing types being consolidated into the B61-12. This version will have a new tailkit, making the bombs more accurate and allowing them to achieve missions using a lower yield than previous versions. The W80-1 warheads for the ALCM are also undergoing a life extension, and the US Air Force is developing a new Long Range Standoff Weapon (LRSO), to be armed with refurbished W80-4 warheads (ACA 2022).

In addition to the nuclear triad, the United States is modernizing its NC3 infrastructure and plans to begin producing new plutonium pits. The National Nuclear Security Administration (NNSA) was mandated by

Congress and the 2018 NPR to produce 80 plutonium pits per year by 2030, but it has already acknowledged that it will not be able to meet this goal until 2035. Whether this is achievable, however, remains in question. The United States has not manufactured plutonium pits since 2013, and only one production facility currently exists, at Los Alamos National Laboratory (CACN 2021). Because this facility is capable of producing only a small number of pits each year, the NNSA intends to expand existing facilities and repurpose the abandoned Mixed Oxide Fuel Fabrication Facility at the Savannah River site. The NNSA has a historical track record of long delays and massive budget overages for virtually all its major projects, however, so there is serious doubt that this can be achieved within the proposed timetable or budget (CACN 2021). The NNSA's own cost estimates for pit production at the Savannah River site have already more than doubled, from \$4.5 billion to \$11 billion, while its estimate for Los Alamos has jumped from \$3 billion to \$4 billion.

US nuclear modernization is an ongoing project—it is possible that some of the current plans for modernization will be changed or canceled by future administrations. For example, the Trump administration's NPR called for developing SLCMs, a program that was canceled in the Biden administration's NPR. However, such grand modernization plans and the development of new nuclear weapons, such as the low-yield SLBMs, signal that the United States intends to maintain a large nuclear arsenal and that nuclear weapons will remain a key feature of US security policy for decades to come. Modernization is creating more accurate weapons and delivery systems that could potentially evade an opponent's defenses. Some delivery systems are dual-capable, meaning they can be armed with conventional or nuclear weapons. This can create confusion and exacerbate tensions, leaving the door open for miscalculation as an opponent may be unsure whether an incoming attack is nuclear. Increasing numbers of dual-capable delivery systems also cause concern that the United States may use conventional weapons to attack an opponent's nuclear weapons infrastructure. This would technically remain below the nuclear threshold but could lead to escalation as it could endanger an adversary's nuclear deterrent. New low-yield weapons also raise concerns that having such options available could make it more likely that decisionmakers will use a nuclear weapon in a nonnuclear conflict.

Recommended Resources

Perspectives on Nuclear Deterrence in the 21st Century (Unal, Afina, and Lewis, eds. 2020)

<https://www.chathamhouse.org/sites/default/files/2020-04-20-nuclear-deterrence-unal-et-al.pdf>

Nuclear Damage Limitation in an Era of Great Power Competition (Purcell 2020)

<https://globalsecurityreview.com/nuclear-damage-limitation-great-power-competition/>

Rethinking Nuclear Deterrence in the Age of Artificial Intelligence (Johnson 2021)

<https://mwi.usma.edu/rethinking-nuclear-deterrence-in-the-age-of-artificial-intelligence>

Policy Roundtable: Nuclear First Use and Presidential Authority (Jackson, Tannenwald, Wolfsthal, Harvey, Whitlark, and Green 2019)

<https://tnsr.org/roundtable/policy-roundtable-nuclear-first-use-and-presidential-authority>

No First Use and Credible Deterrence (Fetter and Wolfsthal 2018)

<https://www.tandfonline.com/doi/full/10.1080/25751654.2018.1454257>

Sole Purpose Is Not No First Use: Nuclear Weapons and Declaratory Policy (Panda and Narang 2021)

<https://warontherocks.com/2021/02/sole-purpose-is-not-no-first-use-nuclear-weapons-and-declaratory-policy>

Rethinking Land-Based Nuclear Missiles (Wright, Hartung, and Gronlund 2020)

<https://www.ucsusa.org/resources/rethinking-icbms>

US Deploys New Low-Yield Nuclear Submarine Warhead (Arkin and Kristensen 2020)

<https://fas.org/blogs/security/2020/01/w76-2deployed>

US Nuclear Excess: Understanding the Costs, Risks, and Alternatives (Reif and Sanders-Zakre 2019)

https://www.armscontrol.org/sites/default/files/files/Reports/Report_NuclearExcess2019_update0410.pdf

US Nuclear Warhead Modernization and “New” Nuclear Weapons (Hersman, Rodgers, and Farabaugh 2020)

https://csis-website-prod.s3.amazonaws.com/s3fs-public/publication/201210_Hersman_US_Nuclear.pdf

Ex-Chief of Nuclear Forces General Lee Butler Still Dismayed by Deterrence Theory and Missiles on Hair-Trigger Alert (Kazel 2015)

<https://www.wagingpeace.org/general-lee-butler/>

II. Human Security and Nuclear Weapons

The US defense establishment has long framed nuclear weapons as necessary to maintaining the security of the United States. There are, however, significant costs that may outweigh any perceived benefits or utility of nuclear weapons. Viewing nuclear weapons through an alternative framework, the human security paradigm, shows a substantial cost to individual security. An emerging framework in international relations, human security emphasizes the security of the individual, making the argument that a state cannot be truly secure if its people are not secure. It focuses on how issues such as the environment, crime, political instability, racism, and poverty inhibit security at the individual level. If a person does not have enough to eat or a safe place to live, or if environmental degradation is creating harmful health effects, then the individual is not actually secure, and, by extension, neither is the state. The traditional national security framework is inconsistent with human security—nuclear postures that rely on deterrence are harmful to the individual, with vulnerable populations especially bearing the brunt.

II.A. Nuclear Weapons Spending

The Congressional Budget Office (CBO) estimates the United States will spend \$634 billion between 2021 and 2030 on the US nuclear arsenal, assuming there are no changes in size and composition or delays in development of new programs, which, based on historical records, is unlikely. This total includes \$297 billion for strategic delivery systems and warheads, with almost half of that funding going to ballistic missile submarines. Approximately \$188 billion is earmarked for modernization, including \$175 billion to modernize the nuclear triad. This does not include the cost of modernizing production facilities, which will be necessary to produce new plutonium pits and will be tens of billions of dollars. The estimate also excludes indirect costs and costs of related activities, such as environmental clean-up and the cost of reducing the nuclear threat from other countries (CBO 2021). Estimates place the cost to rebuild the entire nuclear triad over the next 25 years at nearly \$2 trillion.

Critics argue that many aspects of the modernization program are unnecessary. Replacing existing silo-based ICBMs with the new GBSB, for example, will cost an estimated \$100 billion for acquisition and an

additional \$264 billion in maintenance for a life cycle through 2075 (FAS n.d.). Yet the ground leg of the US nuclear arsenal is anachronistic and vulnerable to attack. ICBMs cannot be used against China or North Korea without flying over Russian airspace. The locations of the stationary ICBMs are known, making them more vulnerable to attack, whereas US nuclear submarines are essentially invulnerable once at sea, providing an assured second-strike capability. ICBMs are kept on high alert so they can be launched before being destroyed in the event of an incoming attack, giving the president only minutes to determine a false alarm. This makes ICBMs unnecessarily dangerous, as the United States could mistakenly launch ICBMs, which cannot be recalled after launch. Some experts have called for the retirement of ICBMs altogether, arguing that the submarine- and air-based legs of the triad are more than sufficient to meet US deterrence requirements.

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With growing inequality and rising inflation in the United States, approaching nuclear weapons spending from the human security framework demands two questions. First, does the United States really need such a large arsenal? Even from a deterrence perspective, 5,500 weapons may be overkill. Second, are there better uses for this funding? There are many social programs that would benefit from increased funding, such as education. Even though the United States on average spends more than other Organization for Economic Cooperation and Development (OECD) countries on education, it consistently ranks lower in key education indicators, largely due to disparity in education spending. Schools in low-income areas are typically underfunded, with the federal government contributing only between 8 to 9 percent of school budgets. Lack of funding creates an unequal starting point for many marginalized communities. Likewise, reallocating the nuclear weapons budget toward social programs could increase

medical funding for veterans or funding for climate sustainability (Schwartz 2018). More people could be fed, more affordable housing built, and access to health care expanded.

II.B. The Human and Environmental Cost of Nuclear Weapons

The consequences to humanity should a nuclear detonation occur are unimaginable, both in terms of short- and long-term effects. Nuclear weapons are uniquely destructive due to powerful blast waves, intense heat from thermal radiation, and high amounts of ionized radiation. The initial blast would lead to massive loss of life, destruction, and displacement. People and buildings closest to the detonation would be instantly vaporized and massive fires would rage. Infrastructure, communications, transportation, water, electrical systems, and healthcare facilities and hospitals would be destroyed or disrupted. Emergency and medical services would be overwhelmed and unable to properly care for victims. In his summary from the First Conference on the Humanitarian Consequences of Nuclear Weapons, conference chair Espen Barth Eide stated, “It is unlikely that any state or international body could address the immediate humanitarian emergency caused by a nuclear detonation in an adequate manner and provide sufficient assistance to the affected” (Eide 2013). It could take decades to rebuild infrastructure, economies, trade, communications, health-care facilities, and schools (ICRC 2020).

In the long-term, even a limited nuclear exchange of 100 weapons could lead to contaminated crops and water sources and cause a cooling of the atmosphere, leading to shorter growing seasons, food shortages, and global famine (Helfand 2018). Widespread radioactive fallout, which could not be contained within national borders, would lead to environmental degradation and ongoing health effects, including delayed radiation sickness and increased risk of leukemia and thyroid cancer. Exposure to high levels of radiation kills cells, damages organs, and causes death. Even low levels of exposure can damage cells, leading to cancer, genetic damage, and mutations (ICAN n.d.a). Seventy years after the atomic bombs that were dropped on Hiroshima and Nagasaki, there are still several thousand people treated each year for cancers and illnesses caused by radiation exposure. It is also possible that gene damage is leading to hereditary transmission of radiation effects (Maresca and Mitchell 2016).

Nuclear weapons also constitute a violation of international humanitarian law (IHL). IHL provisions prohibit indiscriminate attacks, or attacks that are not directed at specific military targets, and put in place the rule of distinction, which requires military action to distinguish between combatants and noncombatants. Nuclear weapons violate both requirements due to their widespread destruction. There are also restrictions on disproportionate attacks, area bombings, and superfluous or unnecessary suffering. In 1995, the International Court of Justice, in its ruling *Legality of the Threat or Use of Nuclear Weapons*, determined that in pretty much every conceivable case, the threat or use of nuclear weapons violates IHL, establishing an anti-use norm (ICJ 1995).

If nuclear weapons remain a key part of US national security policy, there is the potential for nuclear detonation, whether on accident or on purpose. However, some aspects of the US modernization program, such as the development of new low-yield SLBMs and the LRSO, increase that possibility. In the 2018 NPR, the Trump administration called for the development of new low-yield nuclear weapons to increase flexibility and options for the president. Critics fear that lower-yield weapons will increase the chances that nuclear weapons will be considered a viable policy option by reducing the perceived consequences of use, thus increasing the chance of escalation and nuclear warfighting. Delivery systems for low-yield weapons are dual use, meaning an adversary would also need to determine whether US missiles are carrying conventional or nuclear warheads. This is not always possible—for example, a Trident missile fired from a ballistic missile submarine that is carrying a low-yield nuclear warhead is indistinguishable from one that is carrying a warhead with a much larger yield. This leads to an increased potential for miscalculation and, if an adversary feels that it needs to react to a worst-case scenario, could result in full-scale nuclear retaliation to what the United States intended as a tactical nuclear strike. Additionally, the US already has an arsenal of low-yield weapons, including 1,000 gravity bombs and ALCMs, so it has no need for new weapons to fill this perceived gap.

Critics of the LRSO argue that it is a uniquely destabilizing weapon, both because it can be launched without warning and because of its dual use nature. The LRSO contains multiple missiles that can be launched simultaneously at multiple targets, making it more likely to avoid detection. Perry and Weber (2015) note that the 1987 Intermediate Nuclear Forces treaty (INF)

prioritized eliminating ground-launched cruise missiles and in 1991, President Bush unilaterally removed sea-launched cruise missiles. There is also the issue of redundancy—the B21 stealth bomber can penetrate air defenses and is armed with highly accurate and variable-yield gravity bombs, making the LRSO unnecessary (Pifer 2017).

II.C. The Morality of Nuclear Weapons

Related to the concept of humanitarian consequences of nuclear use are long-standing concerns about the morality of relying on the threat of nuclear devastation for security. Deterrence existed long before nuclear weapons, but only in the nuclear era has the potential for massive, immediate, and widespread destruction completely out of proportion to any adversary's action been readily available. In addition, even limited use of nuclear weapons could have global consequences, via widespread radioactive fallout and the possibility of a “nuclear winter,” in which temperatures worldwide would drop significantly, with potentially horrendous implications.

These factors magnify the dilemma created by the power of nuclear weapons: is it just and appropriate for any country to threaten the survival of much or all of humanity in an attempt to maintain its own security? In 2017, Pope Francis, head of the Catholic Church, changed decades of policy by declaring that, for nuclear weapons, “the threat of their use, as well as their very possession, is firmly to be condemned. . . . They cannot constitute the basis for peaceful coexistence between members of the human family (CC 2017).” By condemning the possession of nuclear weapons, the Pope condemned deterrence.

Similarly, one can argue it is unjust that the nuclear-weapons states (NWS) can essentially threaten any nation on the planet with prompt destruction but in return are only threatened by each other. They are capable of absolute devastation and nonnuclear states are not. This problem is exacerbated because the decision to use nuclear weapons is in the hands of a very few. For the United States, the president alone has the sole and unchecked authority to order a nuclear strike, meaning one human could end the lives of tens or hundreds of millions in less than one hour.

A related but distinct question is the feasibility of maintaining nuclear deterrence indefinitely without it eventually leading to catastrophe. Given that humans

are fallible, the idea that deterrence, based on human perceptions, will work perfectly for all time seems unlikely. Put in mathematical terms, if there is a 1 percent chance that a nuclear war will occur in a single year, there is a 64 percent chance it will happen in 100 years. With that in mind, a strong argument can be made that, for its own survival, humanity needs to move away from a system that depends on threatening all humanity. Even if a future without nuclear deterrence is not likely in the near term, it may make sense to begin considering what would be required to move toward such a world.

II.D. Marginalized Populations and Nuclear Weapons

Nuclear weapons testing has had a significant impact on marginalized populations over the past 70 years. Although the United States has not tested nuclear weapons since 1992, when President Clinton established a testing moratorium, the legacy of nuclear weapons testing remains. Many tests were conducted in dependent or colonial territories with large concentrations of Indigenous people, such as New Mexico, Nevada, and the Marshall and Montello Islands, leading to displacement and relocation, increased episodes of cancer and mental illness, and irradiated environments and food sources (ICAN n.d.b.). Many of these effects still linger. In the United States, nuclear production facilities have often been placed in areas where Indigenous or Black communities live, resulting in radioactive contamination, pollution, and displacement of those communities. Much of the uranium used for nuclear weapons between 1944 and 1986 was located on Navajo lands and mined by Navajo people, leading to radioactive contamination and rising cancer rates. Today, those mines are abandoned, yet the land is still contaminated (Wilson 2018).

In the Marshall Islands, the United States detonated 67 nuclear bombs between 1946 and 1958, deliberately exposing Indigenous people to radiation as part of research into the effects of radiation exposure. Colonial narratives that characterized Indigenous populations as uncivilized and the islands as remote and unimportant led the United States to justify such research as worth the risks to the population (Rust 2019). Today, the Marshall Islands remain at risk for radioactive contamination. Although the United States cleaned up

contaminated soil and placed in the Runit Dome⁴ an estimated 3.1 million cubic feet of soil, including soil from the Nevada Test Site, the dome now runs the risk of collapsing from the effects of climate change and rising sea levels. The United States has abdicated further responsibility (Rust 2019).

The development and possession of nuclear weapons are also historically intertwined with colonial practices in terms of power. Nuclear weapons allow the United States to use its power to reshape the world in its image. The continued emphasis by NWS on nonproliferation rather than on disarmament—that is, preventing other states from possessing nuclear weapons while not engaging in disarmament practices—exacerbates the divide between the global North and South. Historically, the more powerful countries have controlled the international agenda, shaping it to meet their needs, often at the expense of the global South. In international institutions that deal with arms control and security issues, the global South’s concerns and perspectives, such as disarmaments and militarized colonial practices, have continually been pushed aside to focus on preventing countries such as Iran and North Korea from obtaining nuclear weapons. The existing national security framework prioritizes the power of NWS, which define the parameters of international security, granting the possession of nuclear weapons to a select few. Consequently, the global South’s interests are ignored. Countries that do not support the existing framework often face reprisals from more powerful countries.

Recommended Resources

Legality of the Threat or Use of Nuclear Weapons (International Court of Justice 1994)

<https://www.icj-cij.org/en/case/95>

A Call for Antiracist Action and Accountability in the US Nuclear Community (Turner, Borja, Djokić, Munk, and Verma 2020)

<https://thebulletin.org/2020/08/a-call-for-antiracist-action-and-accountability-in-the-us-nuclear-community/>

⁴ *The Runit Dome was constructed in 1977 to contain radioactive material from nuclear bomb test explosions. The concrete dome covering the radioactive material is 377 feet in diameter and 18 inches thick.*

Gendered Perspectives and Nuclear Disarmament (Perlik 2018)

<https://www.e-ir.info/2018/09/24/gendered-perspectives-and-nuclear-disarmament/>

Banning Nuclear Weapons: An African Perspective (Denis 2014)

<https://d3n8a8pro7vhmx.cloudfront.net/ican/pages/744/attachments/original/1620204626/AfricanPerspectivesFinal2.pdf>

The Relevance of Gender for Eliminating Weapons of Mass Destruction (Cohn, Hill, and Ruddick 2005)

https://genderandsecurity.org/sites/default/files/the_relevance_of_gender_for_eliminating_weapons_of_mass_destruction_-_cohn_hill_ruddick.pdf

Reflections on Injustice, Racism, and the Bomb (Intondi 2020)

<https://www.armscontrol.org/act/2020-07/features/reflections-injustice-racism-bomb>

The Black Community Has Always Sought a World Free From Nuclear Weapons (Faines 2022)

<https://outrider.org/nuclear-weapons/articles/black-community-has-always-sought-world-free-nuclear-weapons>

Dismantling Discourses: Nuclear Weapons and Human Security (Cabasso and Acheson 2010)

<https://www.reachingcriticalwill.org/images/documents/Publications/BAC/chapter9.pdf>

The Cost of US Nuclear Weapons (Schwartz 2008)

<https://live-nuclear-threat-initiative.pantheonsite.io/analysis/articles/costs-us-nuclear-weapons/>

Nuclear Weapons: The Human Cost (Wilson 2018)

<https://outrider.org/nuclear-weapons/articles/human-cost>

Paying for America’s Arsenal (Schwartz 2018)

<https://outrider.org/nuclear-weapons/articles/paying-americas-arsenal>

III. Nuclear Weapons and International Law

The nuclear nonproliferation and disarmament regime is made up of international institutions dealing with arms control issues and several global and regional treaties. There are two key institutions that work on arms control issues: the United Nations First Committee, which meets annually to make nonbinding recommendations on security issues, and the Conference on Disarmament, which works specifically on nuclear weapons issues. Key treaties regulating nuclear weapons include the NPT, the CTBT, and the Treaty on the Prohibition of Nuclear Weapons (TPNW). There have been several bilateral arms-reduction treaties between the United States and Russia; the most recent is the New START, which entered into force in 2010 and is set to expire in 2026 after the United States and Russia agreed to a five-year extension in 2021. Many countries have joined regional nuclear-weapons-free zones (NWFZs).

III.A. NPT

Considered the cornerstone of the global nonproliferation and disarmament regime, the NPT establishes principles of disarmament, nonproliferation, and peaceful use, determining which states that are parties to the treaty may or may not lawfully possess nuclear weapons. The treaty entered into force in 1970 and was designed to halt the horizontal proliferation of nuclear weapons—that is, the spread of nuclear weapons to additional states. Five NWS⁵ are permitted to maintain nuclear arsenals, on the condition that they negotiate disarmament faithfully, while all remaining members are categorized as nonnuclear-weapons states (NNWS) that agree to forgo nuclear weapons. Three additional countries that possess nuclear weapons—India, Pakistan, and Israel—are not signatories to the treaty; North Korea withdrew from the treaty in 2003 and carried out its first nuclear test in 2006. The NPT also guarantees the inalienable right to enrich uranium for peaceful purposes, such as for nuclear energy and medical research, and requires members to engage in information sharing. Originally scheduled to expire 25 years after entry into force, the NPT was extended indefinitely by member states in 1995. Member states meet every

five years at review conferences to fine-tune the treaty and make recommendations to continue to prevent the proliferation of nuclear weapons.

The NPT has received a lot of flak over the years for creating a system of nuclear haves and have-nots that prioritizes nonproliferation over disarmament. As previously mentioned, the NWS control the international agenda and the NPT is no different. The review conference agendas and final documents, which must be adopted by consensus, generally focus on recommendations to prevent the emergence of new nuclear states, such as Iran or North Korea, without a comparable focus on disarmament for existing NWS. One of the major criticisms of the NPT by NNWS is that while they have upheld their end of the bargain by not acquiring nuclear weapons, NWS have made very little progress on disarmament, violating the terms of the treaty. The wording of the disarmament clause is vague, however, and the NWS argue that even though tens of thousands of nuclear weapons remain, they have participated in meaningful discussions to reduce the number of nuclear weapons. The NWS have also focused on the eventual elimination of nuclear weapons through incremental steps, in a piecemeal fashion, rather than an outright ban. The lack of progress, however, has led many NNWS to question whether the NWS are acting in good faith and the feasibility of reducing nuclear weapons in such a fashion.

III.B. CTBT

The CTBT was negotiated at the Conference on Disarmament in the early 1990s, opening for ratification in 1996. It prohibits “any nuclear weapons test explosion or any other nuclear explosion” (CTBTO 1996), including surface, atmospheric, underwater, and underground tests. Banning nuclear testing advances nonproliferation by preventing the development of nuclear weapons and keeping existing nuclear armed states from building more powerful weapons. It also helps to prevent the environmental degradation and negative health effects associated with nuclear testing. The CTBT has yet to enter into force, as states that have the capability to enrich uranium are required to first ratify the treaty. There are still eight holdouts, including the United States. President Clinton signed the CTBT in 1996 and submitted it to Congress for ratification, where it has languished for almost 30 years.

⁵ The NWS are the United States, the United Kingdom, France, Russia, and China.

III.C. TPNW

The TPNW prohibits states from developing, testing, producing, manufacturing, acquiring, possessing, stockpiling, transferring, receiving, using, or threatening to use nuclear weapons. The treaty also provides for victim assistance and environmental remediation in places affected by the use or testing of nuclear weapons. The treaty had its genesis in the humanitarian initiative, a collaboration between middle power states and civil society, aiming to change the discourse on nuclear weapons to emphasize the humanitarian effects of nuclear war and the lack of preparedness of states to handle the aftermath of a nuclear detonation. In 2010, NPT member states expressed “deep concern at the catastrophic humanitarian consequences of any use of nuclear weapons” and reaffirmed “the need for all States at all times to comply with applicable international law, including international humanitarian law” (UN 2010). A joint statement issued by 16 countries⁶ at the 2012 NPT Preparatory Committee reiterated the humanitarian consequences, calling on all countries to “intensify their efforts to outlaw nuclear weapons and achieve a world free of nuclear weapons” (NPT PrepCom 2012). Between March 2013 and December 2014, the governments of Norway (Oslo), Mexico (Nayarit), and Austria (Vienna)⁷ hosted conferences on the humanitarian impact of nuclear weapons, highlighting the death and destruction that would be caused by a nuclear detonation and the devastating health, environmental, economic, and food effects. Experts concluded that no country or international institution could provide a sufficient humanitarian response in the event of a nuclear detonation. The Humanitarian Pledge, launched at the conclusion of the Vienna conference, and endorsed by 127 countries as of July 2022, called for a legally binding framework prohibiting nuclear weapons.

In December 2016, the United Nations General Assembly (UNGA) passed a resolution convening a 2017 conference “to negotiate a legally binding instrument to prohibit nuclear weapons” (UNGA 2016). In addition to

The TPNW prohibits states from developing, testing, producing, manufacturing, acquiring, possessing, stockpiling, transferring, receiving, using, or threatening to use nuclear weapons.

member states, the conference permitted participation by international organizations and civil society. On July 7, 2017, the conference adopted the TPNW; the treaty entered into force on January 22, 2021. As of July 2022, 66 countries have ratified the treaty, although no NWS or any countries relying on US extended deterrence—including NATO members, Australia, Japan, and South Korea—have signed or ratified.

The United States argues that the TPNW does not account for the current international security environment and is incompatible with extended deterrence and existing defense treaties. This view, however, is rooted in the traditional US defense establishment framework for national security and deterrence, without considering the catastrophic humanitarian consequences of a nuclear detonation, or the risk of use, whether by accident, miscalculation, or design. Although US rhetoric supports the eventual elimination of nuclear weapons, the United States tends to emphasize a phased pathway for reductions, rather than complete elimination, particularly if other countries maintain nuclear arsenals. As evidenced by the lack of progress on disarmament in the NPT framework, using a phased approach to nuclear arms reductions has not worked. The United States has actively opposed the TPNW, voting in opposition to UNGA Resolution 71/258 and subsequent resolutions affirming the treaty, calling on NATO states and its other allies to boycott the treaty conference, and calling on states to withdraw their instruments of ratification.

Critics of the TPNW further argue that it undermines the NPT by focusing solely on disarmament and not proliferation. This is a mischaracterization,

⁶ *The joint statement was made on behalf of Austria, Chile, Costa Rica, Denmark, the Holy See, Egypt, Indonesia, Ireland, Malaysia, Mexico, New Zealand, Nigeria, Norway, the Philippines, South Africa, and Switzerland.*

⁷ *Austria also hosted The Second Vienna Conference on the Humanitarian Impact of Nuclear Weapons on June 20, 2022.*

however, as the treaty not only prohibits members from possessing nuclear weapons, but also requires them to conclude comprehensive safeguard agreements with the International Atomic Energy Agency (IAEA) to prevent the diversion of enriched uranium to weapons. Another criticism is that the requirements for disarmament are vague and not verifiable, but this is an exaggerated claim. The TPNW requires NWS that ratify the treaty to immediately remove their nuclear weapons from operational status, submit a verifiable and irreversible plan to destroy them as soon as possible, and conclude a safeguards agreement with the IAEA. While it is unlikely that the United States or other NWS will join the TPNW in the near term, the treaty makes two important contributions. First, it delegitimizes nuclear weapons by focusing on the humanitarian effects of their possession and use, challenging deterrence theory and reframing the debate surrounding nuclear weapons. Second, it strengthens the existing international norm against the possession, use, or threat of use of nuclear weapons.

III.D. NWFZs

NWFZs are geographical areas where states have negotiated treaties prohibiting nuclear weapons. Five such regional zones exist—Latin America, the South Pacific, Southeast Asia, Africa, and Central Asia. There have been successive calls for a Middle East NWFZ since 1995, but Israel’s status as an undeclared NWS and differences in Arab and Israeli perspectives on disarmament and peace have prevented negotiations from moving forward. NWFZs serve to strengthen the international regime on nuclear nonproliferation and disarmament. Member states also seek to negotiate negative security assurances, which are promises by NWS that they will not use or threaten to use nuclear weapons against states that do not possess nuclear weapons.

III.E. New START

There have been several bilateral arms limitation and reduction treaties between the United States and Russia; the most recent, New START, replaced the expiring START I in 2009, entering into force in 2011. Under New START, the United States and Russia are verifiably limited to a total of 700 deployed delivery vehicles, including ICBMs, SLBMs, and heavy bombers (800 total delivery vehicles—deployed and nondeployed), and 1,550 deployed long-range nuclear warheads (DoS n.d.).

While the treaty was scheduled to expire in February 2021, the United States and Russia agreed to a five-year extension to provide time for the negotiation of a new treaty. However, the progressive deterioration of the US-Russian relationship, even before it was made worse by Russia’s war on Ukraine, means that it is unlikely that there will be a replacement treaty by the time New START expires in February 2026. This would leave the two states with no bilateral treaties limiting their nuclear arsenals for the first time since the Cold War and may mean that both will begin to reverse decades of cuts, leading to an increase in deployed nuclear weapons by each.

Recommended Resources

Treaty on the Non-Proliferation of Nuclear Weapons (UN 1968)

<https://www.un.org/disarmament/wmd/nuclear/npt/text>

The Comprehensive Nuclear-Test-Ban Treaty (CTBTO 1996)

<https://www.ctbto.org/our-mission/the-treaty>

New START Treaty (Department of State 2011)

<https://www.state.gov/new-start/>

Overview of Nuclear-Weapon-Free Zones

<https://www.un.org/nwzf/content/overview-nuclear-weapon-free-zones>

Treaty on the Prohibition of Nuclear Weapons (UN 2017)

<https://www.un.org/disarmament/wmd/nuclear/tpnw>

Humanitarian Pledge (2015)

https://www.bmeia.gv.at/fileadmin/user_upload/Zentrale/Aussenpolitik/Abruestung/HINW14/HINW14vienna_Pledge_Document.pdf

Nuclear Disarmament without the Nuclear Weapons States: The Nuclear Weapons Ban Treaty (Müller and Wunderlich 2020)

<https://www.amacad.org/publication/nuclear-disarmament-without-nuclear-weapon-states-nuclear-weapon-ban-treaty>

How the Treaty on the Prohibition of Nuclear Weapons Impacts the United States, and Why the United States Must Embrace its Entry into Force (Sanders-Zarke and Shelden 2021)

<https://jia.sipa.columbia.edu/online-articles/how-treaty-prohibition-nuclear-weapons-impacts-united-states-and-why-united-states>

Why Does the Nuclear Ban Treaty Matter? (ICRC 2021)

<https://www.icrc.org/en/document/why-nuclear-ban-treaty-matters>

Universalising the TPNW: Challenges and Opportunities (Ritchie and Kmentt 2021)

<https://www.tandfonline.com/doi/full/10.1080/25751654.2021.1935673>

How Can the TPNW Regime be Sustained? (Lenanne and Moyes 2021)

<https://www.tandfonline.com/doi/full/10.1080/25751654.2021.1936997>

The Great Unraveling: The Future of the Nuclear Normative Order (Tannenwald 2018)

<https://www.amacad.org/publication/emerging-risks-declining-norms/section/3>

Technology, Doctrine, and the Risk of Nuclear War (Acton 2018)

<https://www.amacad.org/publication/emerging-risks-declining-norms/section/4>

IV. Role Guides

Three groups are represented in the simulation: US delegation, humanitarian initiative delegation, and civil society delegation. Your instructor will assign you to a delegation. Throughout the simulation, you are expected to act in a manner consistent with your role. You will engage in both intra-group negotiations with your delegation and inter-group negotiations between the delegations.

IV.A. US Delegation

The US delegation consists of representatives from the US defense, intelligence, state, and military apparatus, as well as US arms control experts. The documents below provide a deeper understanding of the US perspective on nuclear weapons and the role nuclear weapons play in deterrence and security policy. As part of talks, you will want to consider the security, military, and diplomatic implications of any recommendations. You will also want to consider the bigger picture—what are the implications for US alliances/extended deterrence and on non-security issues, such as trade/economic and political/human rights issues? Some questions to consider as you prepare for the simulation include:

- What are the costs and benefits of changing US nuclear policies, such as declaratory policy, alert status, missile defense, modernization, and new weapons?
- How do US extended deterrence commitments and alliances affect US policy options?
- How do relations with other NWS, especially Russia, China, and North Korea, affect US disarmament calculations?
- How can the United States build trust with other NWS? What can the United States do differently?
- How can the United States maintain strategic stability without an overreliance on nuclear weapons?
- Are current US nuclear policies conducive to reductions in nuclear arsenals?
- Is it possible to maintain security without nuclear weapons?
- Do nuclear weapons effectively hedge against existing international threats?

Recommended Resources

2022 Nuclear Posture Review (DoD 2022)

<https://s3.amazonaws.com/uploads.fas.org/2022/10/27113658/2022-Nuclear-Posture-Review.pdf>

2018 Nuclear Posture Review (DoD 2018)

<https://media.defense.gov/2018/Feb/02/2001872886/-1/-1/1/2018-NUCLEAR-POSTURE-REVIEW-FINAL-REPORT.PDF>

2010 Nuclear Posture Review (DoD 2010)

https://dod.defense.gov/Portals/1/features/defenseReviews/NPR/2010_Nuclear_Posture_Review_Report.pdf

The Biden Nuclear Posture Review: Obstacles to Reducing Reliance on Nuclear Weapons (Mount 2022)

<https://www.armscontrol.org/act/2022-01/features/biden-nuclear-posture-review-obstacles-reducing-reliance-nuclear-weapons>

The Biden Nuclear Posture Review: Defense, Offense, and Avoiding Arms Races (Pifer 2022)

<https://www.armscontrol.org/act/2022-01/features/biden-nuclear-posture-review-defense-offense-avoiding-arms-races>

Proportionate Deterrence: A Model Nuclear Posture Review (Perkovich and Vaddi 2021)

<https://carnegieendowment.org/2021/01/21/proportionate-deterrence-model-nuclear-posture-review-pub-83576>

America's Nuclear Crossroads: A Forward-Looking Anthology (Dorminey and Gomez, eds. 2019)

<https://www.cato.org/sites/cato.org/files/pdfs/americas-nuclear-crossroads-full.pdf>

IV.B. Humanitarian Initiative Delegation

The humanitarian initiative delegation consists of representatives from Austria, Chile, Costa Rica, Denmark, the Holy See, Egypt, Indonesia, Ireland, Malaysia, Mexico, New Zealand, Nigeria, Norway, the Philippines, South Africa, and Switzerland. The resources that follow provide a deeper understanding of the

humanitarian initiative perspective and the consequences of a nuclear detonation. As part of talks, you will want to consider the security, military, and diplomatic implications of any recommendations, as well as the relationship between the United States and the individual countries represented by the humanitarian initiative. For example, what concessions or guarantees might one of these countries make to get the United States on board with the TPNW? You will also want to consider the bigger picture—what are the implications for multilateralism and the global nuclear nonproliferation and disarmament regime? In addition to the recommended readings, you may want to review country statements and policies on nuclear weapons and other arms control international institutions, such as the United Nations First Committee. You may also find it useful to research the Cluster Munitions Convention (CMC) and the Anti-Personnel Landmine treaty (APL).

Some questions to consider as you prepare for the simulation include:

- How does US nuclear modernization affect the ability to reduce the number of nuclear weapons in the world?
- How does the TPNW make the world more secure and stable?
- How can the United States signal to the world that it is serious about nuclear arms control?
- In what ways can US allies encourage the United States to reduce its nuclear stockpile? How can allies contribute to US security without nuclear weapons?
- Are the existing international institutions strong enough to enforce a nuclear weapons ban?
- How can the United States build trust with other countries? What can be done differently?
- How can the United States maintain strategic stability without overreliance on nuclear weapons?

Recommended Resources

Joint Statement on the Humanitarian Dimension of Nuclear Weapons (NPT PrepCom 2012)

https://www.reachingcriticalwill.org/images/documents/Disarmament-fora/npt/prepcom12/statements/2May_IHL.pdf

The Development of the International Initiative on the Humanitarian Impact of Nuclear Weapons and Its Effects on the Nuclear Weapons Debate (Kmentt 2015)

https://international-review.icrc.org/sites/default/files/irc97_11.pdf

Changing the Discourse on Nuclear Weapons: The Humanitarian Initiative (Minor 2015)

https://international-review.icrc.org/sites/default/files/irc97_12.pdf

Conference Report: Humanitarian Impact of Nuclear Weapons (Oslo 2013)

<https://www.reachingcriticalwill.org/images/documents/Disarmament-fora/oslo-2013/HINW-report.pdf>

Report from the Nayarit Conference (Acheson, Fihn, and Harrison 2014)

<https://www.reachingcriticalwill.org/disarmament-fora/hinw/nayarit-2014/report>

Vienna Conference on the Humanitarian Impact of Nuclear Weapons, Report and Summary of Findings of the Conference (2014)

<https://www.reachingcriticalwill.org/images/documents/Disarmament-fora/vienna-2014/ChairSummary.pdf>

Humanitarian Pledge (2014)

<https://www.reachingcriticalwill.org/images/documents/Disarmament-fora/vienna-2014/humanitarian-pledge.pdf>

Report on the Fourth Conference on the Humanitarian Impact of Nuclear Weapons (Acheson and Pytlak 2022)

<https://www.reachingcriticalwill.org/disarmament-fora/hinw/vienna-2022/report>

Vienna Declaration and Action Plan: Overview (ICAN 2022)

https://assets.nationbuilder.com/ican/pages/2948/attachments/original/1655993756/Overview_of_the_Vienna_Declaration_and_Action_Plan_-_formatted_.pdf?1655993756

IV.C. Civil Society Delegation

The civil society delegation consists of representatives from US and global nongovernmental organizations (NGOs), think tanks, and arms control experts. Its task is to present participants with an overview of the humanitarian consequences of nuclear weapons and to work with delegates to create recommendations that put the United States on the path to disarmament. In addition to the recommended reading below, you may want to review the websites of the International Campaign to Abolish Nuclear Weapons (ICAN), Back from the Brink, Union of Concerned Scientists, and Daisy Alliance. Some recommended steps include pursuing global elimination, renouncing first use, ending sole authority, ending hair-trigger alert, and canceling enhanced weapons.

Some questions to consider as you prepare for the simulation include:

- What steps can the United States take toward nuclear disarmament?
- How can the United States be encouraged to renounce nuclear weapons and join the TPNW?
- How can civil society address the security concerns of the United States?

Recommended Resources

Report of the Canberra Commission on the Elimination of Nuclear Weapons (Commonwealth of Australia 1996)

<https://www.dfat.gov.au/about-us/publications/international-relations/Pages/the-canberra-commission-on-the-elimination-of-nuclear-weapons>

Banning Nuclear Weapons (Article 36 n.d.)

https://article36.org/wp-content/uploads/2013/02/Report_web_23.02.13.pdf

Unspeakable Suffering: The Catastrophic Harm of Nuclear Weapons (Fihn 2013)

<https://d3n8a8pro7vhm.cloudfront.net/ican/pages/1043/attachments/original/1620205155/UnspeakableSuffering-web.pdf>

Catastrophic Humanitarian Harm (ICAN 2015)

<https://d3n8a8pro7vhm.cloudfront.net/ican/pages/749/attachments/original/1575657291/CHH-Booklet-WEB-2015.pdf>

Nuclear Weapons Solutions (Union of Concerned Scientists n.d.)

<https://www.ucsusa.org/nuclear-weapons/solutions>

Decommissioning Nuclear Weapons (Acheson n.d.)

<https://www.wilpf.org/thoughts-for-change/decommissioning-nuclear-weapons/>

How Is Your Country Doing: United States (ICAN n.d.)

https://www.icanw.org/united_states

Emerging Technologies and Nuclear Weapon Risks (ICAN n.d.)

https://d3n8a8pro7vhm.cloudfront.net/ican/pages/1166/attachments/original/1580226579/ICAN_emerging_technology_and_nuclear_weapons_policy_briefing.pdf

What if We Nuke a City? (Kurzgesagt—In a Nutshell 2019)

https://www.youtube.com/watch?v=5iPH-br_eJQ

Back from the Brink: Our Five Policy Solutions

<https://preventnuclearwar.org/our-five-policy-solutions>

References

- ACA (Arms Control Association). 2022. "US Nuclear Modernization Program." Washington, DC. <https://www.armscontrol.org/factsheets/USNuclearModernization>
- CACN (Center for Arms Control and Non-Proliferation). 2021. *US Plutonium Pit Production*. Fact sheet. Washington, DC. <https://armscontrolcenter.org/fact-sheet-u-s-plutonium-pit-production/>
- CBO (Congressional Budget Office). 2021. *Projected Costs of US Nuclear Forces, 2021 to 2030*. Washington, DC. <https://www.cbo.gov/publication/57240>
- CC (Catholic Culture). 2017. "Nuclear Weapons Inherently Immoral, Pope Says." *Catholic World News*, November 10, 2017. <https://www.catholicculture.org/news/headlines/index.cfm?storyid=33849>
- CRS (Congressional Research Service). 2022a. *Defense Primer: Ground Based Strategic Deterrent (GDSB)*." April 5, 2022. <https://sgp.fas.org/crs/natsec/IF11681.pdf>
- CRS (Congressional Research Service). 2022b. *Defense Primer: Hypersonic Boost-Glide Weapons*. <https://sgp.fas.org/crs/natsec/IF11459.pdf>
- CTBTO (Preparatory Commission for the Comprehensive Nuclear-Test-Ban Treaty Organization). 1996. *Comprehensive Nuclear-Test-Ban Treaty (CTBT)*. https://www.ctbto.org/sites/default/files/Documents/CTBT_English_withCover.pdf
- DoD (US Department of Defense). 2018. *Nuclear Posture Review*. Washington, DC. <https://media.defense.gov/2018/Feb/02/2001872886/-1/-1/1/2018-NUCLEAR-POSTURE-REVIEW-FINAL-REPORT.PDF>
- DoS (US Department of State). n.d. *New START Treaty*. Accessed November 28, 2022. <https://state.gov/new-start/>
- Eide, Espen Barth. 2013. "Chair's Summary Humanitarian Impact of Nuclear Weapons." Oslo: Norway Ministry of Foreign Affairs. https://www.regjeringen.no/en/historical-archive/Stoltenbergs-2nd-Government/Ministry-of-Foreign-Affairs/taler-og-artikler/2013/nuclear_summary/id716343/
- FAS (Federation of American Scientists). n.d. *Ground Based Strategic Deterrent: High Risk, No Reward*. Washington, DC. Accessed October 4, 2022. <https://uploads.fas.org/2021/02/GBSD-Fact-Sheet-Program-Flaws.pdf>
- Helfand, Ira. 2018. *Nuclear Famine: Two Billion People at Risk*. Bethesda, MD: Physicians for Social Responsibility. <https://psr.org/wp-content/uploads/2018/04/two-billion-at-risk.pdf>
- ICAN (International Campaign to Abolish Nuclear Weapons). n.d.a. "Blast, Heat and Radiation." Geneva, Switzerland. Accessed October 4, 2022. https://www.icanw.org/blast_heat_and_radiation
- . n.d.b. "The Human Cost of Nuclear Testing." Geneva, Switzerland. Accessed October 4, 2022. https://www.icanw.org/nuclear_tests
- ICRC (International Committee of the Red Cross). 2020. *Humanitarian Impacts and Risks of Use of Nuclear Weapons*. Geneva, Switzerland. <https://www.icrc.org/en/document/humanitarian-impacts-and-risks-use-nuclear-weapons>
- Korda, Matt, and Hans M. Kristensen. 2021. "China Is Building a Second Nuclear Missile Silo Field." Blog. July 26. Federation of American Scientists. <https://fas.org/blogs/security/2021/07/china-is-building-a-second-nuclear-missile-silo-field/>
- Kristensen, Hans M., and Matt Korda. 2021. "Nuclear Notebook: United States Nuclear Weapons, 2021." *Bulletin of the Atomic Scientists*, January 12, 2021. <https://thebulletin.org/premium/2021-01/nuclear-notebook-united-states-nuclear-weapons-2021/>

- Maresca, Louis, and Eleanor Mitchell. 2016. "The Human Costs and Legal Consequences of Nuclear Weapons Under International Law." *International Review of the Red Cross* 899. <https://international-review.icrc.org/articles/human-costs-and-legal-consequences-nuclear-weapons-under-international-humanitarian-law>
- Negin, Elliott. 2021. "Ask a Scientist: Calling Out the Hype Over Hypersonic Weapons." *The Equation* (blog). April 2, 2021. <https://blog.ucsusa.org/elliott-negin/calling-out-the-hype-over-hypersonic-weapons>
- NPT PrepCom (Preparatory Committee for the 2015 Review Conference of the Parties to the Treaty on the Non-Proliferation of Nuclear Weapons). 2012. Joint Statement on the Humanitarian Dimension of Nuclear Disarmament. https://www.reachingcriticalwill.org/images/documents/Disarmament-fora/npt/prepcom12/statements/2May_IHL.pdf
- Perry, William J., and Andy Weber. 2015. "Mr. President, Kill the New Cruise Missile." *Washington Post*, October 15, 2015. https://www.washingtonpost.com/opinions/mr-president-kill-the-new-cruise-missile/2015/10/15/e3e2807c-6ecd-11e5-9bfe-e59f5e244f92_story.html
- Pifer, Steven. 2017. "Cancel the Long-Range Standoff Missile." *Order from Chaos* (blog). June 28. <https://www.brookings.edu/blog/order-from-chaos/2017/06/28/cancel-the-long-range-standoff-missile/>
- Rust, Susanne. 2019. "How the US Betrayed the Marshall Islands, Kindling the Next Nuclear Disaster." *Los Angeles Times*, November 10, 2019. <https://www.latimes.com/projects/marshall-islands-nuclear-testing-sea-level-rise/>
- Schwartz, Stephen I. 2018. "Paying for America's Arsenal." *Outrider*, January, 29, 2018. <https://outrider.org/nuclear-weapons/articles/paying-americas-arsenal>
- UN (United Nations). 2010. *2010 Review Conference of the Parties to the Treaty on the Non-Proliferation of Nuclear Weapons*. Final Document, Volume I. <https://documents-dds-ny.un.org/doc/UNDOC/GEN/N10/390/21/PDF/N1039021.pdf>
- UNGA (United Nations General Assembly). 2016. 71/258 Taking forward multilateral nuclear disarmament negotiations. <https://documents-dds-ny-un.org/doc/UNDOC/GEN/N16/466/69/PDF/N1646669.pdf>
- Wilson, Ward. 2018. "Nuclear Weapons: The Human Cost." *Outrider*, February 18, 2018. <https://outrider.org/nuclear-weapons/articles/human-cost>



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Daisy Alliance is a 501(c)(3) non-profit focused on broadening education and awareness on the risks posed by nuclear weapons, with an emphasis on bridging the gap between today's youth and the older generations.

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