TOWARD A NEW STRATEGIC APPROACH TO U.S. EXTENDED NUCLEAR DETERRENCE

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About the Author

Paige Gasser is a senior fellow at the Center for Global Security Research (CGSR) at Lawrence Livermore National Laboratory, where she focuses on U.S. deterrence strategy and policy, extended deterrence, strategic stability, nonproliferation, and arms control.

She previously served as a senior policy advisor in the Strategy, Plans, and Policy Directorate (J5) of the Joint Chiefs of Staff at the Department of Defense. In this role, she advised the chairman and vice chairman of the Joint Chiefs of Staff and other senior leaders on issues related to NATO, nuclear arms control, extended deterrence in the Indo-Pacific, and nuclear modernization. She was responsible for representing Joint Staff positions at the NATO High Level Group Working Group, preparing the chairman for NATO Military Committee engagements, and supporting Joint Staff senior leaders' strategic dialogues with U.S. allies, including the United Kingdom, France, and the Republic of Korea. She contributed to the 2022 *Nuclear Posture Review*, the 2022 *National Defense Strategy*, and the 2023 *Countering Weapons of Mass Destruction Strategy*. For her service, she received the Joint Civilian Service Commendation Award in 2023 from the Office of the Chairman of the Joint Chiefs of Staff.

Before her time with the Joint Staff, she served as a senior policy advisor in the Office of the Secretary of Defense (OSD) within the Office of Nuclear and Missile Defense Policy, where she focused on congressional affairs and nuclear modernization. She provided guidance on U.S. nuclear deterrence policy and strategy and advised senior Department of Defense leaders on congressional engagements across a range of nuclear policy issues.

At Lawrence Livermore National Laboratory, she has worked on various National Nuclear Security Administration (NNSA) and U.S. Department of State projects, specializing in deterrence, nonproliferation, and arms control. She holds a BS in Social Sciences and Global Politics from California Polytechnic State University, San Luis Obispo, and an MA in Law and Diplomacy from the Fletcher School at Tufts University.

Preface

Brad Roberts

Sometimes the wheel turns full circle. In the Cold War, extended deterrence was at the center of the nuclear policy discourse, given the threats to U.S. allies in both Europe and Asia and uncertainty about how to construct a nuclear umbrella that would balance the requirements of deterrence and assurance. For many years after the Cold War, extended deterrence was little more than a footnote in the nuclear policy discourse. For example, in the first *Nuclear Posture Review* of 1994, extended deterrence was mentioned only once. This was a fair reflection of the times, when the threats to U.S. allies were few and the trend lines of history seemed headed in the right direction. But over the last couple of decades, the extended deterrence topic has come step by step back onto the policy agenda. In the early 2000s, U.S. allies in Northeast Asia began to worry about the potential de-coupling of America from their defense as the new North Korean nuclear threats to the U.S. homeland took shape. Then, NATO's newer members began to seek stronger protection from an increasingly hostile Russia. Then, a broader group of U.S. allies became motivated to strengthen deterrence of increasingly confrontational and nuclear-arming neighbors. Then in 2023, the Strategic Posture Commission (SPC) concluded that the U.S. extended nuclear deterrent is not fit for purpose in the changed security environment and will become even less fit over the coming decade without remedial action. Throughout this period, the United States has worked with its allies to take many new steps to strengthen the hardware and software of extended deterrence. The issue came fully back to center stage when the United States elected in 2024 a president whose sometimes contradictory statements on allies and alliances have raised urgent new questions about the durability and effectiveness of the U.S. nuclear umbrella and a search by allies for viable alternatives. Thus, the nuclear discourse is once again dominated by uncertainty about how to construct a nuclear umbrella that is fit for the purposes of deterrence and assurance—but it an altogether different context.

As a consequence of prolonged neglect, the intellectual capital now available to the emerging community of interest falls well short. There is little common knowledge. The history of extended deterrence in Europe and Asia is remembered

selectively, if at all. The adaptations to the practice of extended deterrence within U.S.-led alliances of the last 15 years are poorly understood. Moreover, thinking about how best to adapt to new circumstances is generally driven from the bottom up rather than the top down; that is, it is driven by point solutions to specific military, political, or technical problems rather than by overarching strategy. In addition, in the United States at least, civil-military coordination has not been strong, as civilian leaders have generally put their focus elsewhere and as military leaders retain a strong focus on "more usable" conventional options. The result is rightly judged by the SPC to be unfit.

The need for strategic thinking about extended deterrence has never been more urgent. Paige Gasser's work represents a timely and significant contribution to this critical debate. Finalized in May 2025, this volume is intended to enable the more informed and strategic debate we all seek. It is a blend of history and analysis. The historical review is both concise and comprehensive, in that it touches upon the elements of the past that are relevant to the present unfolding debate. The analytical portion then lays out in a systematic way a strategy-driven exploration of policy options. The result will be widely useful to policymakers, military leaders, and experts in both the trans-Atlantic and trans-Pacific communities.

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Executive Summary

Decades of U.S. extended nuclear deterrence have produced a complex legacy marked by both triumph and uncertainty. The United States has, at critical moments, managed to successfully deter adversaries and reassure allies, yet these achievements have often been shadowed by persistent doubts about the credibility and cohesion of its commitments. As the familiar contours of the Cold War faded, the emergence of new threats from Russia and China have exposed the fragility of traditional extended deterrence strategies. These shifting realities force us to confront a sobering question: Can the strategic approaches that once ensured stability in a bipolar world adapt to the unpredictable pressures of a new, multipolar nuclear era?

Today, U.S. extended nuclear deterrence stands at a pivotal juncture. The emergence of two nuclear-armed peer competitors, rapid technological advances, and evolving alliance dynamics demand a reassessment of established approaches. The United States must move beyond assumptions of static commitments and recognize the unique needs and contributions of its diverse allies across regions.

This paper identifies four main options on the table: reducing U.S. commitments, expanding guarantees to more countries, maintaining the status quo, or establishing a new division of labor among allies. Each path carries significant strategic implications, risks, and tradeoffs, but none fully addresses the central challenge—the "two-nuclear-peer problem." Confronted with the prospect of facing both Russia and China as nuclear-armed adversaries, the United States may struggle to maintain conventional superiority in two theaters simultaneously. This could force difficult choices between abandoning one theater or relying more heavily on nuclear weapons to offset conventional inferiority, highlighting the urgent need to reassess extended nuclear deterrence strategy.

As the United States confronts this rapidly evolving security environment, a new strategic approach to extended nuclear deterrence is essential. Allies are increasingly willing—and needed—to take on greater responsibilities, yet meaningful rebalancing of roles has yet to occur. Institutionalizing a new division

of labor among allies over the next decade will be crucial for sustaining credible extended nuclear deterrence.

To meet the demands of a multipolar security environment, I argue that the United States and its allies must take several practical steps:

1. **Adopt a Comprehensive View of the Threat:** Allies in both Europe and the Indo-Pacific must develop a shared understanding of the challenges posed by Russia and China, recognizing that these threats are interconnected. Closer cooperation and coordination are necessary to address adversaries that increasingly integrate nuclear weapons into their strategies.

2. **Leverage Alliances as Essential Multipliers:** U.S. alliances provide critical capabilities and amplify U.S. strength. With finite resources, the United States cannot manage simultaneous conflicts with two nuclear peers without robust allied support. Allies must be prepared to compensate when U.S. forces are redirected to other regions.

3. **Assess and Rebalance Collective Capabilities:** The United States and its allies should identify capability gaps and determine where allies can contribute more effectively, moving beyond simple metrics like defense spending. A clear division of labor must be established, specifying which countries will provide which forces and capabilities. This includes addressing the lack of limited nuclear response options and considering the potential for allies such as the UK or France to provide additional systems in Europe, or for Indo-Pacific allies to bolster regional deterrence.

4. **Prioritize Procurement and Capability Development:** Procurement decisions must be made now, given the long lead times required. Priorities should focus on both conventional and emerging domains such as cyber, space, and missile defense. By leveraging allied capabilities, the United States can free up resources for contingencies in other regions and ensure that investments are concentrated on the most strategically significant areas.

5. **Enhance Interoperability and Joint Planning:** U.S. force structure planning must account for allied contributions, with clear roles and missions defined in advance. Interoperability across all domains—cyber, space, conventional, and nuclear—is essential for effective deterrence. This requires joint training, co-production agreements, a stronger defense industrial base, and realistic exercises to ensure seamless allied operations in crisis or conflict.

6. **Strengthen Communication and Signaling:** A robust and consistent communication strategy is necessary to avoid contradictions that could undermine deterrence. Strategic communications should be global in scope, reflecting the interdependencies among theaters, and should incorporate lessons learned from recent conflicts and military exercises.

The stakes could not be higher. If the United States fails to modernize and rebalance its extended nuclear deterrence strategy for a multipolar world, the consequences will reverberate far beyond policy circles. Alliance cohesion may weaken, the risk of nuclear proliferation could rise, and the fragile architecture of international stability may begin to unravel. Delaying these necessary steps is not just a matter of strategic oversight—it is an invitation for risk: deterrence could fail, alliances could fracture, and the United States and its partners could find themselves dangerously unprepared when the next crisis or conflict erupts. In a world where the margin for error is shrinking, adaptation is not optional. Only by embracing a new division of labor among allies, investing in interoperability and capability development, and bolstering strategic communications can the United States hope to meet the challenges in the decade ahead.

Introduction[1]

Over 75 years ago, the United States made a bold and defining strategic decision—to extend its nuclear deterrent to key allies in Europe and Asia. Since the end of World War II, extended deterrence has been foundational to U.S. alliances, and today, more than seven decades later, this commitment remains steadfast. However, the United States and its allies are now confronting a fundamentally different strategic landscape, characterized by multiple adversaries who prioritize nuclear weapons in their national security strategies. These nuclear competitors are expanding, modernizing, and diversifying their arsenals, which has significant implications for extended deterrence.

Russia poses an acute threat with its large, modern, and diversified nuclear arsenal of strategic and theater-range weapons, as well as its pursuit of novel nuclear systems. While Russia remains a nuclear peer to the United States, it has put nuclear weapons at the center of its military and political strategy and envisions their limited use as a means of political coercion in war.[2] Since Russia escalated its war against Ukraine in February 2022, Russian leaders have utilized rhetoric surrounding their nuclear capabilities to sway Western responses. Meanwhile, the People's Republic of China (PRC) has embarked on its largest nuclear force expansion and arsenal diversification in its history. While China's end goal remains uncertain, Beijing is actively constructing hundreds of intercontinental ballistic missile (ICBM) silos, and has established a nascent nuclear triad, advancing toward nuclear peer status with the United States. As of 2024, China possesses over 600 operational nuclear warheads in its stockpile and will likely have over

1 I would like to extend gratitude to Dr. Brad Roberts and Mike Albertson for their support throughout this effort, including their time and thoughtful feedback on earlier iterations of this paper. Special thanks are also due to Dr. Rupal Mehta, Dr. Anna Péczeli, and Dr. Maximilian Hoell for their feedback on an early draft, as well as to Gregory Weaver for his insightful comments on the main aspects of my argument. The views expressed here are my own personal views and should not be attributed to any other individual or any institution.

2 Brad Roberts, *On Theories of Victory, Red and Blue*, Livermore Paper No. 7 (Livermore, CA: Center for Global Security Research, 2020), pp. 45-52. https://cgsr.llnl.gov/sites/cgsr/files/2024-08/CGSR-LivermorePaper7.pdf. Accessed September 12, 2024.

1,000 deliverable warheads by 2030.[3] The PRC's military assertiveness and lack of transparency around its nuclear ambitions raises profound concerns about its intentions and nuclear strategy. The Democratic People's Republic of Korea (DPRK) also continues to enhance its nuclear, ballistic missile, in addition to its non-nuclear capabilities, further complicating this landscape. According to the U.S. Defense Intelligence Agency (DIA), in 2022, Pyongyang conducted over 150 missile tests.[4] Meanwhile, Tehran continues to stockpile enriched uranium well beyond the limits set by the Joint Comprehensive Plan of Action (JCPOA), reducing the time it would take for Iran to produce enough weapons-grade uranium for a single nuclear device if it chooses to pursue that path.[5] Additionally, the degradation of Iran's security situation in the region—marked by the destruction of the Assad regime, the decimation of Hamas in Gaza, and the weakening of Hezbollah in Lebanon—could potentially alter Tehran's calculus regarding the pursuit of nuclear weapons, as it may perceive them as a necessary deterrent in an increasingly unstable environment.

The situation is exacerbated by growing collaboration and collusion among Russia, China, North Korea, and Iran, which raises the risk of coordinated aggression during crises and conflict. This necessitates careful consideration by the United States and its allies regarding complex escalation dynamics and the need to deter multiple adversaries simultaneously in multiple theaters. The United States will need to credibly assure its many concerned allies and partners, while preparing to respond to potential conflicts and restore deterrence if it fails in one or both

3 U.S. Department of Defense, *Military and Security Developments Involving the People's Republic of China, 2024,* Annual Report to Congress, Office of the Secretary of Defense (2024), p. 101. https://media.defense.gov/2024/Dec/18/2003615520/-1/-1/0/MILITARY-AND-SECURITY-DEVELOPMENTS-INVOLVING-THE-PEOPLES-REPUBLIC-OF-CHINA-2024.PDF. Accessed December 19, 2024.

4 U.S. Defense Intelligence Agency, *Nuclear Challenges: The Growing Capabilities of Strategic Competitors and Regional Rivals* (October 2024), p. vi. https://www.dia.mil/Portals/110/Images/News/Military_Powers_Publications/Nuclear_Challenges_2024.pdf. Accessed December 30, 2024.

5 Stephanie Lichtenstein, "Iran accelerates production of near weapons-grade uranium, IAEA says, as tensions with US ratchet up," AP News (February 28, 2025). https://www.ap.org/news-highlights/spotlights/2025/iran-accelerates-production-of-near-weapons-grade-uranium-iaea-says-as-tensions-with-us-ratchet-up/. Accessed March 12, 2025.

theaters.[6] Crises or conflicts are unlikely to remain confined to a single geographical area, and while opportunistic aggression may not seem highly probable for various reasons, dismissing its possibility could increase the likelihood of such actions. This dynamic raises the risk of opportunistic or coordinated aggression from a secondary actor, particularly when the United States is preoccupied with addressing the initial threat. Moreover, the U.S. force is designed to win a war against one peer, not two, as highlighted by the 2018 Commission on the National Defense Strategy.[7] The Strategic Posture Commission further highlighted in October 2023 that "the risk of conflict with these two nuclear peers is increasing. It is an existential challenge for which the United States is ill-prepared, unless its leaders make decisions now to adjust the U.S. strategic posture."[8] While I do not doubt the need to adjust U.S. strategic posture, at the core of those unfolding discussions are also hard questions and choices about U.S. extended deterrence policy and strategy. I aim to contribute to that debate.

The two-nuclear-peer problem and the implication for extended nuclear deterrence is both a current and emerging concern, requiring planners, strategists, and policymakers to consider the existing landscape while also preparing for longer-term developments that may emerge in the coming decade. The practices of U.S. extended nuclear deterrence were established in a security environment and era that is rapidly fading in memory. Against this backdrop and given the central role of the U.S. nuclear arsenal in our alliances, we must consider how to adapt to meet the challenges in the emerging landscape of two nuclear peers.

6 Often referred to as the two-nuclear-peer problem. However, this is not just one simple scenario. For an in-depth analysis, see *China's Emergence as Second Nuclear Peer: Implications for U.S. Nuclear Deterrence Strategy, A Report of a Study Group Convened by The Center for Global Security Research at Lawrence Livermore National Laboratory* (Livermore, CA: Center for Global Security Research, 2023). https://cgsr.llnl.gov/sites/cgsr/files/2024-08/CGSR_Two_Peer_230314.pdf. Accessed November 4, 2024. Also see Congressional Commission on the Strategic Posture of the United States, *America's Strategic Posture, Final Report* (October 2023). https://www.ida.org/-/media/feature/publications/a/am/americas-strategic-posture/strategic-posture-commission-report.ashx. Accessed November 4, 2024.

7 National Defense Strategy Commission, *Providing for the Common Defense: The Assessment and Recommendations of the National Defense Strategy Commission* (November 2018), p. vi. https://www.usip.org/publications/2018/11/providing-common-defense. Accessed November 4, 2024.

8 Congressional Commission on the Strategic Posture of the United States, *America's Strategic Posture, Final Report* (October 2023), p. vii.

Addressing these challenges requires our response to be rooted in strategy and raises several key questions about the role of U.S. alliances in securing peace and reinforcing stability:

1. Are the longstanding assumptions that have guided U.S. extended nuclear deterrence and assurance practices for decades still valid in this new context?

2. How could plausible future scenarios in the coming decade impact U.S. extended nuclear deterrence and assurance?

3. Is our current course sufficient, or should the United States consider a revised strategy for extended nuclear deterrence and assurance?

The implications of the United States' answers to those questions will reach far beyond its borders. In this paper, I examine the evolving requirements of U.S. extended nuclear deterrence within a multipolar security environment, assessing whether the historical and existing assumptions and strategies remain valid. I argue for a departure from the vintage version of the U.S. nuclear umbrella, calling for revised extended nuclear deterrence practices that address the evolving challenges faced by the U.S. and its allies and partners, as the conditions under which U.S. extended nuclear deterrence was originally designed no longer exist. Furthermore, considering the unprecedented security environment, I explore four potential strategies that the United States could pursue and offer considerations for how the United States can make its extended nuclear deterrence strategy fit for purpose.

This paper proceeds as follows. I begin by introducing and discussing the foundations of U.S. extended nuclear deterrence policy, providing definitions for what extended nuclear deterrence and assurance entail, why the United States extends nuclear deterrence, and how it serves the United States' and allied interests. Although alliances encompass more than just military and security relationships, and extended deterrence includes more than just nuclear weapons, I focus specifically on the nuclear aspects of U.S. alliances, often described as providing a "nuclear umbrella." Extended nuclear deterrence is distinct in that it involves deterring adversaries through the explicit threat of U.S. nuclear weapons—not merely deterring adversary nuclear use, but ensuring broader strategic stability through credible nuclear guarantees. Chapter 1 will review the evolution of U.S. extended nuclear deterrence policy since the Cold War by highlighting elements that have changed and remained consistent, as described in the previous three U.S. *Nuclear Posture Reviews* (2010, 2018, 2022).

Following a discussion on the foundations of U.S. extended nuclear deterrence policy, Chapters 2 and 3 will provide a historical overview of U.S. practices, software, and hardware for extending deterrence and assuring allies in both Europe and the Indo-Pacific. Chapter 2 will explore the core nuclear history of NATO, outlining why and how the U.S. extends nuclear deterrence in Europe. I will also detail the changes and continuities in NATO's nuclear policy as reflected in various NATO Summit Communiqués, NATO's Strategic Concepts, and the 2012 *Deterrence and Defense Posture Review*. Chapter 3 will then turn to the Indo-Pacific and provide an overview for how the United States has historically extended deterrence in the region, and how these requirements and the U.S. response have changed over time.

Chapter 4 will examine the current security environment and how U.S. alliances are evolving to address today's challenges. This section will discuss the challenges that have arisen since the end of the Cold War, with a particular focus on the emerging two-nuclear-peer problem and its impact on the existing regional deterrence architecture. By outlining the threats facing U.S. alliances in a multipolar environment, this chapter will explore the potential implications for U.S. extended deterrence policy and regional nuclear deterrence, including how our assumptions have or are changing.

Chapter 5 aims to challenge readers to consider potential extended deterrence strategies over the coming decade. This chapter will explore four possible futures for extended deterrence: 1) A downsized U.S. security role, where the United States steps back from its extended deterrence commitments, potentially allowing for nuclear proliferation; 2) The United States providing extended deterrence guarantees to additional countries; 3) The United States maintaining its current course with gradual, tailored adaptations; and 4) A new division of labor and rebalancing within existing U.S. alliance structures. This chapter examines the risks and benefits of all these options, as well as what key external factors could influence these various extended deterrence choices and their potential outcomes.

Chapter 6 examines a potential future where Russia and/or China extend their nuclear deterrence to other nations. While this scenario may appear unlikely, it could present a significant challenge that the United States must address as it refines its extended nuclear deterrence strategy. The chapter evaluates the trade-offs associated with the four strategy options outlined in Chapter 5 and examines how these alternatives could counter Red's potential approach of extending nuclear deterrence to allied nations.

The final chapter, Chapter 7, makes the case for an extended deterrence strategy fit for purpose, which includes sustaining a well-designed division of labor among the

United States and its allies to prevent the worst outcomes. This chapter will tee up considerations for a U.S. strategy for extended deterrence over the coming decade, providing practical next steps for how U.S. alliances can adapt to the future multipolar environment. This chapter will also present my conclusions and draw lessons from U.S. extended deterrence practices by reviewing their successes and shortcomings.

While the United States stands at a critical juncture regarding its role in the world and the purpose of its nuclear arsenal, our allies are caught in the nuclear crosshairs. In this paper, I argue that in this day and age, extended nuclear deterrence remains essential to U.S. vital interests. The strategic decisions ahead for the United States concerning its allies and partners will require collective resolve and sustained U.S. leadership. The alternative is acquiescence, which would force the United States' current allies to choose between developing their own nuclear arsenals or adapting to life within the geostrategic sphere of influence of Russia or China, leaving the United States with fewer allies in an increasingly dangerous world. As we confront these choices, the legacy of extended nuclear deterrence will serve as both a guide and a stark reminder of the profound implications for international peace and stability.

Chapter 1: Extending Nuclear Deterrence and Assuring U.S. Allies

Since the early nuclear age, the role of U.S. nuclear weapons to protect its allies—commonly referred to as extended nuclear deterrence—has been a cornerstone of U.S. deterrence strategy and posture in Europe and Asia. Today, the United States maintains a global network of alliances and unique defense relationships with over 30 countries, offering explicit, formal guarantees of extended nuclear deterrence to North Atlantic Treaty Organization (NATO) member states, as well as Japan, the Republic of South Korea (ROK), and Australia. For the past seven decades, protecting these allies from external threats has been a fundamental element of U.S. strategy and a major driver of U.S. military planning, affirming that aggression against them could, under certain circumstances, warrant a U.S. nuclear response.

The U.S. policy of extended nuclear deterrence emerged in response to the overwhelming conventional threat posed by the Soviet Union to Western Europe at the dawn of the Cold War. In the aftermath of World War II, the United States and its allies faced a numerically superior Soviet conventional army stationed in Eastern Europe, heightening the urgency to protect Western Europe from Communist expansion. This global ideological confrontation between communism and liberal democracy revolved around competing visions for governance and societal organization, with the United States striving to prevent the spread of communism to safeguard its political, economic, and security interests. Western European security became a vital interest for the United States, as the fall of Europe to Communist control would have significantly weakened America's position in the global struggle for supremacy. To counter Soviet expansion, the United States adopted the grand strategy of containment and a military strategy of deterrence. U.S. leaders, recognizing the breakdown of the international order caused in part by pre-war American isolationism, sought to prevent another world war by proactively building a liberal, rules-based international order. This vision, articulated by figures like George Marshall, emphasized the need for global peace and stability to support U.S. interests and maintain international security.

A key pillar of this strategy was the creation of an alliance system to deter aggression, which not only protected U.S. vital interests but also reinforced America's global leadership position. This approach enabled the U.S. military to develop power projection capabilities through a network of overseas bases, ensuring its ability to respond to threats and maintain the balance of power. As Cold War tensions escalated and Soviet expansionist ambitions became clear, the United States sought to deter Soviet invasion and aggression by extending its nuclear deterrent to its NATO allies. During a time when the United States held nuclear superiority over the Soviet Union, this strategy was perceived as a credible threat, sufficient to deter any advances by the Red Army into Western Europe.[9] NATO was established in 1949, with U.S. nuclear forces forward deployed to NATO in 1954, serving as the foundation of the collective defense agreement and introducing nuclear-sharing arrangements that enhanced alliance unity and bolstered deterrence.

Throughout the Cold War, the policy of extended deterrence was not limited to Europe. The concept of extended deterrence was adapted to other regions. In the Indo-Pacific, to defend against growing threats from the Soviet Union, China, and North Korea, the U.S. nuclear umbrella expanded to include Australia, Japan, and South Korea, though without NATO-style nuclear-sharing arrangements. Through these alliances, the United States aimed to convince potential adversaries that it might employ its nuclear arsenal in defense of its allies, even in the absence of a direct attack on the United States.

However, the conclusion of the Cold War and the dissolution of the Soviet Union led to a new era centered on decreasing both the role of nuclear weapons

9 During the Cold War, there were significant credibility issues associated with extended nuclear deterrence. To address these concerns, the United States implemented measures such as forward-deploying nuclear forces and pre-delegating nuclear launch authority to select high-level military commanders. Prior to the adoption of these practices, nuclear deterrence was not widely perceived as credible. These measures primarily aimed to counterbalance the conventional military superiority of the Soviet Union and the Warsaw Pact, which the United States lacked other effective means to challenge. On NATO's use of nuclear weapons to deter a conventionally superior Soviet Union, see Keir A. Lieber and Daryl G. Press, "The Rise of U.S. Nuclear Primacy," *Foreign Affairs* 85, no. 2 (March/April 2006). https://www.foreignaffairs.com/articles/united-states/2006-03-01/rise-us-nuclear-primacy. Accessed November 5, 2024.

in U.S. national security strategy and the quantity of nuclear weapons needed,[10] resulting in a significant shift toward a focus on regional nuclear deterrence. The United States rapidly withdrew all its non-strategic nuclear weapons from East Asia and began dramatically reducing its nuclear presence in Europe,[11] reflecting a widespread belief among the United States and its allies that the improved security environment of the early 1990s allowed for a reduction in nuclear risks and a shift in deterrence strategies. But as we know, our adversaries drew different conclusions during this era about the role of nuclear weapons. The security landscape continued to evolve, ultimately requiring adaptations in U.S. extended deterrence strategy and alliance networks.

Today, the United States asks more of its nuclear arsenal than any other nuclear weapon state because not only do U.S. nuclear weapons deter strategic attacks on the U.S. homeland, they also deter such attacks on numerous U.S. allies and partners worldwide.[12] While the United States has viewed its alliances as its "strategic center of gravity"[13] and a unique strategic advantage over its adversaries, few issues have perplexed U.S. policymakers and military planners as much as extended nuclear deterrence. This decades-long experiment has proven to be fruitful and challenging, fraught with strategic dilemmas, and ultimately a story of strategic advantage. Yet, this story is still unfolding.

This chapter explores the concept of extended nuclear deterrence and its significance for the United States. At its core, extended nuclear deterrence was historically about the assurance that U.S. nuclear capabilities can protect not only

10 Between 1967 and 2014, the United States' nuclear arsenal decreased by more than 85 percent, including a 78% reduction since the fall of the Berlin Wall in 1989. The % of U.S. non-strategic nuclear weapons has declined by more than 90% since September 30, 1991. See "Transparency in the U.S. Nuclear Weapons Stockpile," U.S. Department of State (April 27, 2015). https://2009-2017.state.gov/t/isn/npt/statements/241165.htm. Accessed 31 March 2025.

11 Susan J. Koch, "The Presidential Nuclear Initiatives of 1991-1992," Case Study 5, (Washington, DC: Center for the Study of Weapons of Mass Destruction, National Defense University, September 2012). https://ndupress.ndu.edu/Portals/68/Documents/casestudies/CSWMD_CaseStudy-5.pdf. Accessed March 13, 2025.

12 U.S. Department of Defense, "2022 Nuclear Posture Review," in *2022 National Defense Strategy of the United States of America* (2022), pp. 7-10. https://media.defense.gov/2022/Oct/27/2003103845/-1/-1/1/2022-NATIONAL-DEFENSE-STRATEGY-NPR-MDR.pdf. Accessed September 28, 2024.

13 General Joseph F. Dunford, Jr. "From the Chairman: Allies and Partners Are Our Strategic Center of Gravity," *Joint Force Quarterly* 87, no. 4 (October 2017), pp. 4-5. https://ndupress.ndu.edu/Portals/68/Documents/jfq/jfq-87/jfq-87.pdf. Accessed September 28, 2024.

the U.S. homeland but also allies and partners around the globe. First, I delve into the reasons behind this commitment and the implications it holds for U.S. foreign policy and military strategy. I then examine the historical assumptions that have shaped U.S. views on extended nuclear deterrence, particularly nonproliferation objectives, as one rationale for extending deterrence is the belief that a credible American nuclear umbrella can dissuade U.S. allies from developing their own nuclear arsenals, thereby contributing to nonproliferation and global stability.

A crucial aspect of this discussion will focus on how to gauge the effectiveness of U.S. assurances to its allies. I then consider the role of domestic public opinion in shaping perceptions of security and how these sentiments can influence the credibility of U.S. commitments. Furthermore, I explore the complexities of assuring security for allies and partners that fall outside the explicit protection of the nuclear umbrella. The chapter will also address the costs associated with extended nuclear deterrence practices. Lastly, I investigate how U.S. nuclear policy has changed and remained consistent over the years. Through this comprehensive exploration, I aim to illuminate the complexities and nuances of extended nuclear deterrence, offering a deeper understanding of its importance to U.S. strategy and security interests, and international stability.

Defining Extended Nuclear Deterrence and Assurance

Extended deterrence refers to the broader protective measures provided to allies and partners, defined as "[protecting] other countries and territories from attack, distinct from preventing a direct attack on one's own national territory."[14] This concept addresses two distinct audiences: the allied state facing a threat and the adversary posing that threat. Extended deterrence more broadly encompasses a range of military, economic, and diplomatic measures designed to deter adversaries from attacking or coercing those under the U.S. security umbrella, including

14 The theoretical principles of extended deterrence were clearly articulated by Paul Huth in his 1988 article in *The American Political Science Review*, where he noted that defending allies against external threats is a persistent aspect of international competition. Paul Huth, "Extended Deterrence and the Outbreak of War," *The American Political Science Review* 82, no. 2 (June 1988), p. 424. https://doi.org/10.2307/1957394. Accessed September 28, 2024.

conventional military capabilities, security commitments, and other forms of assurance to allies, addressing threats across various domains.[15]

Extended nuclear deterrence, on the other hand, is a specific subset of extended deterrence that focuses exclusively on the role of U.S. nuclear weapons in deterring adversaries. The primary goal of U.S. extended nuclear deterrence is to deter attacks on allies that threaten U.S. vital interests, while also assuring allies that their security is protected. Extended nuclear deterrence goes beyond simply deterring adversary nuclear use; it ensures broader strategic stability by providing credible nuclear guarantees to allies, reassuring them of U.S. commitment to their defense and discouraging adversaries from testing those commitments. In this way, extended nuclear deterrence is a narrower but critical component of the broader framework of extended deterrence.

Often conflated with extended deterrence is the complementary concept of assurance, which aims to address and alleviate the security concerns of U.S. allies and partners. Assurance involves convincing allies that the United States can guarantee their safety from intimidation, coercion, or attack, often through commitments to use military force. It may include visible military exercises and operations to demonstrate resolve, whether conducted unilaterally by the United States or in collaboration with allies. While there is no universally accepted definition of assurance, scholars have provided valuable insights and descriptions of the concept. Schelling defined assurance as a state's credibility in promising not to take negative actions, originally referring to the assurance of adversaries regarding defensive intent.[16] According to Schelling, this initially was tied to the perceived

15 In the evolution of the concept of extended deterrence, Glenn H. Snyder was among the first to differentiate between primary and secondary deterrence, with the latter defined as the "deterrence of enemy attack not against oneself, but against a third party." See Glenn H. Snyder, *Deterrence and Defense: Toward a Theory of National Security* (Princeton, NJ: Princeton University Press, 1961), p. 17. Herman Kahn later expanded this framework by identifying three types of deterrence based on the target of the deterrent threat: Type I: Deterrence aimed at preventing attacks directed at the United States (the threatener); Type II: Deterrence focused on preventing extreme provocations, such as nuclear or conventional attacks on Europe (an important ally); and Type III: Deterrence concerning relatively minor or moderate provocations against any third party other than allies. Subsequent analysts primarily defined extended deterrence in terms of Kahn's Type II deterrence. See Herman Kahn, *On Escalation: Metaphors and Scenarios* (New York, Washington, and London: Frederick A. Praeger, 1965). p. 281.

16 As Thomas Schelling famously wrote, when it comes to deterrence, "The difference between the national homeland and everything 'abroad' is the difference between threats that are inherently credible, even if unspoken, and the threats that have to be made credible." See Thomas Schelling, *Arms and Influence* (New Haven, CT: Yale University Press, 1966), pp. 36; 74.

capacity to deter; however, it was only later that deterrence became associated with dealing with adversaries and influencing their decisionmaking, and assurance became linked with allies.[17]

Some experts have cautioned that extended deterrence is one of the most challenging aspects of U.S. nuclear strategy,[18] as it is inherently more difficult to establish credibility than with direct deterrence.[19] From a military operations perspective, denying an attack far from home is difficult because it requires projecting force thousands of miles away, often near the aggressor's territory.[20] As Quester observed, "basic deterrence is very easy to accomplish, where there is much more doubt comes in 'extended deterrence.'"[21] This doubt is largely due to the overall logic of extended deterrence, which some have characterized as "irrational."[22] This challenge is sometimes illustrated with the analogy of a leaky umbrella.

Schelling articulated the requirements of extended deterrence and assurance flawlessly:

17 Jeffrey W. Knopf, "Varieties of Assurance," *Journal of Strategic Studies* 35, no. 3 (2012), pp. 375-399. https://www.tandfonline.com/doi/full/10.1080/01402390.2011.643567. Accessed October 2, 2024.

18 Paul Huth advised that extended deterrence poses significant challenges for policymakers. It requires a credible military threat to deter potential aggressors while simultaneously employing skillful diplomacy to convey that the political costs of peace are manageable. This duality highlights the inherent complexity of extended deterrence: it is both a military and a political issue, reflecting Clausewitz's idea that "war is the continuation of policy by other means." Paul Huth, "Extended Deterrence and the Outbreak of War," *The American Political Science Review* 82, no. 2 (June 1988), pp. 423-443. https://doi.org/10.2307/1957394. Accessed September 28, 2024.

19 For a discussion on direct versus extended deterrence, see Michael J. Mazaar, "Understanding Deterrence," *Perspective,* RAND Corporation (April 2018), pp. 3-4. https://www.rand.org/content/dam/rand/pubs/perspectives/PE200/PE295/RAND_PE295.pdf. Accessed October 2, 2024.

20 As Elaine Bunn points out, extended deterrence to U.S. allies involves several operational challenges that are often not discussed. See M. Elaine Bunn, "Extending Nuclear Deterrence and Assuring U.S. Allies," in Charles Glaser, Austin Long, and Brian Radzinsky, eds., *Managing U.S. Nuclear Operations in the 21st Century* (Washington, DC: Brookings Institution Press, 2022), p. 201.

21 George H. Quester, "Some Thoughts on 'Deterrence Failures,'" in *Perspectives on Deterrence*, Paul C. Stern et al., eds. (New York and Oxford: Oxford University Press, 1989), p. 63.

22 As Lieber and Press argued in 2020, "in a world where both sides have secure retaliatory arsenals…[t]hreats to use nuclear weapons to defend allies from a conventional attack appear even more irrational and incredible." See Kier A. Lieber and Daryl G. Press, *The Myth of the Nuclear Revolution: Power Politics in the Atomic Age* (Ithaca, NY: Cornell University Press, 2020), p. 97.

> To project the shadow of one's military force over other countries and territories is an act of diplomacy. To fight abroad is a military act, but to persuade enemies or allies that one would fight abroad, under circumstances of great cost and risk, requires more than military capability. It requires projecting intentions. It requires having those intentions…and communicating them persuasively to make other countries behave.[23]

Further highlighting the issue of doubt and credibility, Yost described assurance as "communicating a credible message of confidence in the dependability of security commitments."[24] This reliability entails assuring allies that the United States will defend them, even at the potential cost of risking its own troops and national survival. Effectively conveying this assurance, however, can be extremely challenging.

During the Cold War, allies frequently debated the credibility of the U.S. promise to "sacrifice New York for Paris."[25] These debates emphasized how the effectiveness of extended nuclear deterrence was increasingly assessed based on allies' expressions of reassurance rather than the actual likelihood of armed conflict. Known as the Healy Theorem that was argued famously by British Defense Minister Denis Healy in the late 1960s, "it takes only 5% credibility of American retaliation to deter the Russians, but 95% credibility to reassure the Europeans."[26] More recently, Go Myung-hyun noted that in today's context, assurance requires the United

23 Thomas Schelling, *Arms and Influence* (New Haven, CT: Yale University Press, 1966), paragraph 12.

24 David S. Yost, "Assurance and US Extended Deterrence in NATO," *International Affairs (Royal Institute of International Affairs 1944-)* 85, no. 4 (July 2009), p. 775. http://www.jstor.org/stable/27695089. Accessed September 18, 2024.

25 The British and French pursued their own nuclear deterrents for various reasons, including the fear that America might revert to isolationism after World War II. For example, in 1961, French President Charles de Gaulle asked U.S. President John F. Kennedy whether the United States would "trade New York for Paris," as noted in a State Department memorandum. This question later prompted nuclear strategists and scholars to draw connections between cities—such as Paris and Pittsburgh or Bonn and Boston—raising doubts about the credibility of American protection. See "Memorandum of Conversation: Wednesday Morning Talks between President Kennedy and General de Gaulle, US/MC/1, Paris, 31 May 1961," in Charles S. Sampson, ed., *Foreign Relations of the United States, 1961–1963, Volume XIV, Berlin Crisis, 1961–1962* (Washington, DC: U.S. Department of State, Office of the Historian, 1993). https://history.state.gov/historicaldocuments/frus1961-63v14/d30. Accessed September 18, 2024. See also Robert Jervis, *The Illogic of American Nuclear Strategy,* (Ithaca, NY: Cornell University Press, 1984).

26 Denis Healey, *The Time of My Life* (London, UK: Norton, 1989), p. 243.

States to foster allies' belief in its commitment to defend them if deterrence fails, emphasizing that it is less about deterring adversaries and more about ensuring that allies feel secure.[27]

This commonality between the Cold War and today highlights an important aspect—the requirements for extended deterrence and assurance are not necessarily identical. As some have argued, the United States may have one focused strategy on deterring Red from attacking Green (i.e., allied countries), and another strategy to ensure that Green feels protected from Red.[28] Moreover, an adversary might be deterred from attacking an ally, even if that ally feels its security is not sufficiently assured. Consequently, the requirements for assurance may, in some cases, exceed those for deterrence. The challenge of effectively balancing extended deterrence and assurance within U.S. alliances has remained a critical and formidable issue.[29] As Trachtenberg explained it:

> Extended deterrence is similarly challenged by a need to understand that its effectiveness depends on how both allies and adversaries perceive the credibility of U.S. commitments. American views of how others should perceive the credibility of U.S. nuclear threats are less relevant than how others actually perceive them. Moreover, the views of allies and adversaries can vary widely, based on historical, cultural,

27 Myong-Hyun Go, "North Korean Provocations and the Challenges for the ROK-US Alliance," Issue Brief, The Asan Institute for Policy Studies (2022), pp. 7–9. http://en.asaninst.org/wp-content/uploads/2022/12/Issue-Brief-North-Korean-Provocations-and-the-Assurance-Challenge-for-the-ROK-US-Alliance_ENG.pdf. Accessed October 2, 2024.

28 The term "Red" refers to United States and allies' adversaries, and "Green" refers to U.S. allies. For a deeper discussion on how assurance requirements may differ from extended deterrence, see Justin V. Anderson, Jeffrey A. Larsen, and Polly M. Holdrof, "Extended Deterrence and Allied Assurance: Key Concepts and Current Challenges for U.S. Policy," INSS Occasional Paper, US Air Force Institute for International Security Studies, USAF Academy, Colorado (September 2013). https://www.usafa.edu/app/uploads/OCP69.pdf. Accessed November 5, 2024.

29 This difficult balance can be witnessed in U.S. strategy documents. For example, the 2022 NPR states, "Part of our assurance to Allies and partners is a continued and strengthened commitment to arms control, nuclear nonproliferation, and nuclear risk reduction to improve collective security by reducing or constraining adversary capabilities." While complimentary to deterrence, these assurances are quite different from explicit nuclear deterrence guarantees. See U.S. Department of Defense, *2022 Nuclear Posture Review*, in *2022 National Defense Strategy of the United States of America* (2022), p. 8.

and other unique circumstances.[30]

Trachtenberg emphasized a crucial aspect that remains relevant today: extended deterrence and assurance are both inherently complex and challenging, but the added necessity of tailoring strategies to the specific needs of each ally (to ensure assurance) and each adversary (to ensure deterrence) further complicates the task. There is no one-size-fits-all formula for achieving effective extended deterrence and assurance; each situation requires a carefully crafted and context-specific approach.

Therefore, testing what is and is not effective in terms of extended deterrence has proven to be quite challenging,[31] and academic research and literature is quite mixed. For instance, Walt argued that the existence of a formal agreement reveals little about the actual level of commitment.[32] In contrast, Leeds emphasized that formal alliance commitments are crucial for reinforcing the credibility and success of extended deterrence.[33] More recently, McManus observed that visible commitment from individual U.S. leaders helped to enhance the credibility of extended deterrence and reduced the likelihood of U.S. allies being targeted in conflicts with adversaries.[34]

Since the Cold War, the forward deployment of nuclear weapons on or near allied territory has been regarded as a key method for strengthening the credibility

30 David J. Trachtenberg, "US Extended Deterrence, How Much Strategic Force Is Too Little?" *Strategic Studies Quarter* 10, no. 5 (2016), p. 63. https://www.airuniversity.af.edu/Portals/10/SSQ/documents/Volume-10_Issue-5/Trachtenberg.pdf. Accessed October 2, 2024.

31 Academic research on the deterrent value of alliances and nuclear weapons remains ambiguous, as assessing the effectiveness of extended deterrence is difficult from a methodological perspective. See Paul Huth and Bruce Russett, "Testing Deterrence Theory: Rigor Makes a Difference," *World Politics* 42, no. 4 (1990), pp. 466-501. https://doi.org/10.2307/2010511. Accessed March 14, 2025.

32 Stephan M. Walt, "Why Alliances Endure of Collapse," *Survival* 39,no. 1 (1997), p. 157. https://doi.org/10.1080/00396339708442901. Accessed March 14, 2025.

33 However, this work is based on a data set from 1816 to 1944. Brett Ashley Leeds, "Alliance Reliability in Times of War: Explaining Stat Decisions to Violate Treaties," *International Organization* 57, no. 4 (Fall 2003), pp. 801-827. https://doi.org/10.1017/S0020818303574057. Accessed March 14, 2025.

34 Roseanne McManus, "Making It Personal: The Role of Leader-Specific Signals in Extended Deterrence," *The Journal of Politics* 80, no. 3 (2018), pp. 982-995. https://www.journals.uchicago.edu/doi/10.1086/697462. Accessed March 14, 2025.

of assurances.[35] However, Fuhrmann and Sechser concluded that while defense agreements with nuclear weapon states increased the extended deterrent effect, nuclear deployments or forward basing on allied territory did not increase the extended deterrent effect.[36] Their findings emphasize that the credibility of extended deterrence hinges more on the perception of U.S. commitment and resolve than on the forward basing of nuclear assets. This principle has shaped U.S. policy since the Cold War, which has consistently asserted that credible extended deterrence depends on credible U.S. strategic forces. European allies, in particular, have always regarded the U.S. strategic arsenal as the cornerstone of their security. During the Cold War, confidence in the U.S. extended deterrence guarantee was rooted in the United States' ability to deter attacks on its own territory, with its effective and reliable nuclear arsenal serving as a powerful reassurance that it could also deter threats to allied nations. However, while this capability was essential, it alone was insufficient. Today, even though the United States remains well equipped to deter nuclear attacks on its homeland (central deterrence is largely effective), allies continue to feel uneasy, reflecting lingering doubts about whether U.S. resolve and commitment to their defense remain as robust as they once were.

Allies are anxious because extended nuclear deterrence demands more than just the United States' ability to protect its own territory; it also requires flexible, theater-specific options in addition to those needed for central deterrence. As the Strategic Posture Commission stressed,"Given the geographic distance between the U.S. homeland and its Allies overseas and the long lead time for force projection from the U.S. homeland, Allies stressed the importance of U.S. military forces being available in theater for deterrence and assurance purposes."[37]

Allies' concern also stems from a perception that the United States may no longer view their security as vital (as it did during the Cold War) as well as fears of uncontrolled escalation if U.S. strategic forces target an adversary's homeland. This

35 Huth concluded in his 1988 book that alliance ties are unlikely to strengthen the credibility of extended deterrence unless the stronger power deploys forces on the territory of the weaker power during peacetime military cooperation. See Paul Huth, *Extended Deterrence and the Prevention of War* (New Haven, CT: Yale University Press, 1988), p. 215.

36 However, this conclusion is based on data spanning from 1950 to 2000. See M. Fuhrmann and T. Sechser, "Signaling Alliance Commitments: Hand-Tying and Sunk Costs in Extended Nuclear Deterrence," *American Journal of Political Science* 58, no. 4 (2014), pp. 919-935. https://uva.theopenscholar.com/files/todd-sechser/files/signaling_alliance_commitments_8.pdf. Accessed March 14, 2025.

37 Congressional Commission on the Strategic Posture of the United States, *America's Strategic Posture, Final Report* (October 2023), p. 75.

underscores the need for tailored regional capabilities that can address specific threats effectively while minimizing the risk of provoking widespread conflict or uncontrollable nuclear escalation.

Why the United States Has Extended Nuclear Deterrence

If the United States is taking a risk by extending its nuclear deterrent to allies abroad—an action that some consider irrational and costly—it is important to examine the proposed benefits of this approach and the reasons that make assuming certain risks worthwhile.

Extended nuclear deterrence has been based on two key U.S. policy imperatives— 1) maintaining regional security, which includes deterring adversaries from launching an attack against U.S. allies that would threaten U.S. vital interests, and 2) ensuring that other countries don't seek their own nuclear capabilities, a proliferation problem that could challenge the United States and U.S.- backed regional orders. This was referred to as the "Nth country problem" during the early Cold War, reflecting fears that allied nuclear acquisition could provoke a broader proliferation cascade, where multiple other countries might feel compelled to develop their own arsenals. Such a scenario would not only undermine U.S. efforts to maintain regional stability but could also lead to unpredictable security dilemmas, heightening the risk of nuclear conflict. Additionally, the United States has long worried that nuclear-armed allies might act independently, potentially initiating conflicts that the United States would not have chosen and dragging America into dangerous confrontations. Both then and now, the credibility of extended deterrence has been seen as essential for preventing these risks, ensuring that allies rely on U.S. security guarantees rather than pursuing their own nuclear capabilities.

Both imperatives were seen as not only in the United States' interest, but also in the interest of our allies and partners, as this practice not only protected U.S. allies from potential aggression but also reinforced the collective security architecture that has underpinned global stability since the end of World War II. Our unmatched network of allies and partners have long been recognized as a cornerstone of international peace and stability, as they were the foundation of deterrence that successfully prevented great power war and nuclear weapons use

for decades.[38] Moreover, renouncing nuclear possession was also in the interest of non-nuclear allies because any arsenal they may possess would likely be small and therefore, may be less effective for deterrence purposes. This key role that extended deterrence plays in underwriting nuclear nonproliferation was too often underappreciated. Nonproliferation made the world safer by reducing the number of nuclear-armed states, thereby lowering the risk of nuclear conflict, accidents, and weapons falling into the hands of rogue actors or terrorists.

The United States continued to share nuclear weapons with NATO allies during the Cold War to prevent an impending wave of nuclear proliferation. In 1963, following the emergence of Britain and France as nuclear powers, U.S. Secretary of Defense Robert McNamara warned President John F. Kennedy that the number of nuclear-armed states could triple within a decade and quintuple within 15 years.[39] The strategy of providing American nuclear weapons to NATO allies—under U.S.-designed safeguards and oversight, and only releasable with the authority of the U.S. President and the North Atlantic Council (NAC)—was aimed at increasing the credibility of deterrence threats and assuring allies, thereby reducing their need for additional independent Allied nuclear capabilities. Moreover, during their bilateral discussions on the draft Treaty on the Non-Proliferation of Nuclear Weapons (NPT), both the United States and the Soviet Union carefully negotiated the treaty text to ensure that no provisions prohibited U.S./NATO or the Soviet Union from forward deploying nuclear weapons. Both nations viewed NATO nuclear-sharing

38 Joseph Clark, "Pentagon Official: Alliances Are Key to U.S. Nuclear Deterrence Advantage," *DOD News* (August 2, 2024). https://www.defense.gov/News/News-Stories/Article/Article/3859346/pentagon-official-alliances-are-key-to-us-nuclear-deterrence-advantage/. Accessed January 3, 2025.

39 On March 21, 1963, during what was then referred to as a "news conference," President Kennedy expressed his concerns about nuclear proliferation, stating that he was "haunted by the feeling that by 1970 … there may be ten nuclear powers instead of four, and by 1975, fifteen or twenty." In a subsequent response, he expanded on this estimate, saying, "I can see the possibility in the 1970s … of a world in which 15, 20, or even 25 nations may possess these [nuclear] weapons. I regard that as the greatest possible danger and hazard." See "News Conference 52, March 21, 1963, President John F. Kennedy, State Department Auditorium, Washington, DC" (March 21, 1963). https://www.jfklibrary.org/archives/other-resources/john-f-kennedy-press-conferences/news-conference-52, Accessed November 5, 2024.

arrangements and USSR forward deployment as essential to preventing further nuclear weapons development by European nations.[40] [41]

Today, extended deterrence continues to serve as an invaluable nonproliferation tool. Providing allies and partners with a reliable alternative to pursuing independent nuclear capabilities contributes to and supports U.S. nonproliferation objectives, which in turn, furthers global stability. Just as during the Cold War, allies and partners in both theaters currently have no credible alternatives to U.S. nuclear extended deterrence commitments. In NATO, while France and the UK possess nuclear capabilities, other allies have not viewed these strategic forces as credible[42] due to their relatively small numbers and lack of diverse delivery systems compared to Russia's nuclear arsenal, and serious doubts about the willingness of France to put itself at risk to extend nuclear deterrence to other NATO members. In Asia, there are no existing alternatives to U.S. nuclear forces.

The nonproliferation benefit of U.S. extended deterrence policy has been consistently raised in U.S. strategic documents for decades, with the *2022 Nuclear Posture Review* (NPR) specifically highlighting the following: "Extended nuclear deterrence contributes to U.S. non-proliferation goals by giving Allies and partners confidence that they can resist strategic threats and remain secure without acquiring nuclear weapons on their own."[43]

However, extending nuclear deterrence to allies and partners is crucial for several other reasons, outlined in Table 1, that are often overlooked in discussions on the topic.

40 For a historical overview of how NATO's nuclear sharing arrangements were intended to prevent the spread of nuclear weapons and how these arrangements were well known and part of the acquis of the NPT, see William Alberque, "The NPT and the Origins of NATO's Nuclear Sharing Arrangements," *Proliferation Papers*, no. 57, *Institut Français des Relations Internationales* (Ifri) (2017). https://www.ifri.org/sites/default/files/migrated_files/documents/atoms/files/alberque_npt_origins_nato_nuclear_2017.pdf. Accessed November 5, 2024.

41 There was significant concern that West Germany might seek to establish an independent nuclear weapons capability. McNamara, "The Diffusion of Nuclear Weapons with and without a Test Ban Agreement, Memorandum for the President, Washington, DC, Department of Defense, 12 February 1963," in David W. Mabon and David S. Patterson, ed., *Foreign Relations, 1961-1963, Arms Control and Disarmament* (Washington, DC: U.S. State Department, Office of the Historian, 1995). https://2001-2009.state.gov/r/pa/ho/frus/kennedyjf/vii/50954.htm. Accessed November 5, 2024.

42 However, this dynamic may be shifting as debates in Europe continue to emerge. This topic will be explored further in Chapter 5.

43 U.S. Department of Defense, *2022 Nuclear Posture Review*, in *2022 National Defense Strategy of the United States of America* (2022), p. 8.

Table 1. Summary of Benefits and Risks of Extended Nuclear Deterrence

Category	Benefits	Risks
Deterrence	Deters regional adversaries who must consider the possibility of a coordinated response from the U.S. and multiple allies, complicating their strategic calculations.	Potential adversary miscalculations could unintentionally escalate conflicts, posing an existential risk to the U.S. homeland through uncontrolled nuclear escalation from a regional conflict.
Collective Security	Enhances collective security, forming a unified front against aggressors and promoting stability.	Dependence on U.S. security may weaken allies' own defense initiatives over time.
Strategic Advantage	Creates a strategic advantage through collaboration, resource sharing, and intelligence exchange.	Coordination challenges among allies could hinder effective responses to threats, especially in crisis or conflict.
Global Influence	Maintains U.S. influence and status as a global military power, facilitating operations abroad.	Increased tensions with adversaries like Russia and China may arise from perceived threats.
Trust and Cooperation	Strengthens alliances, fostering trust and encouraging allies to enhance their defense capabilities.	Over-reliance on U.S. commitments may lead to complacency among allies regarding their own security.
Political Benefits	Preserves global security, facilitates diplomatic coordination, and protects common values among democratic states against autocratic and totalitarian regimes.	Political backlash or dissent among allies regarding U.S. policies could arise.
Military-Operational Benefits	Provides base access, enhances intelligence sharing, and improves force projection capabilities.	Increased military presence may provoke adversaries and lead to heightened tensions.
Economic Benefits	Strengthens economic ties with allies, supports the U.S. military-industrial complex through arms sales, and enhances the effectiveness of sanctions against adversaries through coordination.	Economic dependency may complicate foreign relations.

First, extended deterrence is a commitment to deter and, if necessary, to respond across the spectrum of potential nuclear and non-nuclear scenarios

in defense of allies and partners.[44] Extended deterrence helps deter regional adversaries and maintains regional stability by complicating an adversary's decision calculus. The U.S. commitment to extended deterrence signals to adversaries that aggression will not only provoke a response from the ally but also from the United States, the world's most powerful military, with a large budget, advanced technology, and global reach. Adversaries must factor in the potential U.S. response and consider the possibility of severe retaliation, which can deter them from pursuing aggressive actions that might otherwise seem advantageous (deterrence by cost imposition). The knowledge that the United States is committed to defending its allies with the full spectrum of nuclear capabilities raises the stakes, making the costs of aggression potentially catastrophic. This credible threat can deter adversaries from initiating conflict in the first place.

Second, by extending nuclear deterrence, the United States enhances collective security, forming a unified front against potential aggressors and deterring hostile actions. This approach is based on the belief that tackling challenges collaboratively is more effective, creating a strategic advantage for the United States and its allies. Adversaries must consider the possibility of a coordinated response from multiple U.S. allies, complicating their strategic calculations. This unified front can effectively counter actions from nations like Russia and China by demonstrating solidarity and resolve. In the Indo-Pacific, the United States has emphasized a "cooperative approach between the United States and Allies in decisionmaking related to nuclear deterrence policy, strategic messaging, and activities that reinforce collective regional security."[45] In the Euro-Atlantic area, the United States has reaffirmed that "a strong, cohesive Alliance with a clear nuclear mission remains essential to deter aggression and promote peace and stability."[46] A key aspect of this unified front and cohesion is that U.S. military capabilities enhance the defense posture of allies, reducing their vulnerability to coercion. This cooperation also facilitates the sharing of resources, intelligence, and capabilities, leading to more effective military operations. Additionally, aggressive actions against the United States and its allies could lead to significant non-military repercussions. Diplomatic consequences, such as sanctions and international condemnation from the United States and

44 The 2022 NPR affirmed that the role of U.S. nuclear forces is to deter all forms of strategic attacks, and accounts for existing and emerging non-nuclear threats with strategic effects. See ibid., pp. 7-8.

45 Ibid., p. 15.

46 Ibid., p. 14.

its allies, could further complicate an adversary's global position and undermine its advantages.

Third, extending nuclear deterrence to U.S. allies and partners is not just a strategic military posture; it is fundamental for maintaining global stability, promoting collective security, and safeguarding national interests. In this complex geopolitical environment, the security and prosperity of the United States are closely intertwined with the security of its allies and partners abroad. The United States cannot succeed in regional deterrence or in combat without its allies and partners. As the 2024 National Defense Strategy Commission notes, such cooperation requires moving beyond allies and partners providing access, basing, and overflight and toward demonstrating integrated and combined capability, interoperability in employing that capability, and the collective resolve to do so.[47] The security of U.S. allies has significant second- and third-order effects, contributing to regional stability that is vital for global economic interests. Instability in one region can trigger ripple effects, leading to economic downturns, refugee crises, and the spread of extremism. By deterring threats to its allies and partners, the United States helps uphold a stable international order. In an increasingly interconnected world, the security of the United States is closely linked to the security of its allies, making extended deterrence a critical component of U.S. foreign policy.

Lastly, by committing to the defense of its allies, the United States strengthens its vast network of allies and partners, which remains our strategic advantage. In this bewilderingly security environment, the role of allies is not just beneficial, it is a strategic necessity. Allies provide the United States with significant resources, including military capabilities, intelligence sharing, and economic support, which collectively enhance the ability to address global threats. The issue then becomes whether the United States has better chances of prevailing alone or in partnership. The answer is clear—partnerships with allies amplify U.S. power and effectiveness. One of the most critical advantages allies provide is a global network of overseas basing infrastructure. These bases allow the United States to project power and respond to crises anywhere in the world within hours, a capability that would be impossible to achieve without allied cooperation. For example, bases in Europe, the Middle East, and the Indo-Pacific ensure that the United States can deter adversaries, reassure partners, and maintain a forward presence that strengthens

47 National Defense Strategy Commission, *Report of the Commission on the National Defense Strategy* (July 29, 2024), p. 27. https://www.armed-services.senate.gov/imo/media/doc/nds_commission_final_report.pdf. Accessed March 14, 2025.

global stability. This infrastructure not only enhances military readiness but also serves as a visible demonstration of U.S. commitment to its allies and the international order. Ultimately, allies are a force multiplier for the United States. They extend American reach, share the burden of global security, and provide critical support in addressing the challenges of an increasingly dangerous world. In partnership with allies, the United States is far better positioned to prevail against threats and maintain its leadership on the global stage.

The Costs of Extended Nuclear Deterrence

It has been a risky business to extend nuclear deterrence, and to receive extended nuclear deterrence commitments. From the United States' perspective, at the core of this strategy lies a critical question: *What level of risk is it willing to bear?* Specifically, this involves the risk of a regional conflict escalating out of control, potentially resulting in an existential-scale nuclear attack on the United States homeland. This is the most fundamental issue regarding extended nuclear deterrence: *Does the United States' investment in the security of its allies justify accepting this existential risk?*

While the United States has taken a significant risk in extending its nuclear deterrent to protect its allies, those allies are equally taking a substantial risk by placing their trust and reliance on the United States for a key aspect of their defense. From a U.S. ally perspective, the core question is: *Can we trust the United States to uphold its extended nuclear deterrence commitments, even if doing so risks an existential threat to its own homeland?*

U.S. allies have made binding legal commitments, such as signing the NPT, to forgo the development or acquisition of nuclear weapons. These commitments were made largely because the United States preferred a system in which it provided nuclear protection, ensuring that allies would not feel the need to develop their own nuclear arsenals. While these legal commitments remain strong today, the inherent risk persists. If the United States were to waver in its commitment or if geopolitical circumstances were to shift, allies could find themselves vulnerable, having sacrificed the option of independent nuclear deterrence in exchange for U.S. protection. This delicate balance underscores the mutual risks and responsibilities inherent in the U.S. nuclear umbrella.

While the United States views its alliances as its "military center of gravity,"[48] the decision to make a nuclear deterrence commitment to another country presents complex strategic dilemmas, as nuclear strategists have long recognized.[49] One significant cost of these commitments is the increased vulnerability they create for the United States. Adversaries, recognizing the centrality of these alliances to U.S. global strategy, may view extended nuclear deterrence as a lever to undermine American influence and security. By targeting U.S. allies—either through coercion, subversion, or direct threats—adversaries can exploit these commitments to sow discord within alliance structures, weaken mutual trust, and force the United States into difficult decisions that strain its credibility. For example, an adversary might deliberately provoke a crisis involving a U.S. ally, testing Washington's resolve. If the United States hesitates, it risks undermining its credibility and the trust of its allies, potentially fracturing its alliances. Furthermore, adversaries may use extended deterrence commitments to drive wedges between the United States and its allies, exploiting differences in threat perceptions, strategic priorities, or domestic political pressures. By fostering divisions, adversaries can weaken the cohesion of alliances, reducing their effectiveness as a collective deterrent. In this way, extended nuclear deterrence not only presents risks to the United States but also creates opportunities for adversaries to disrupt, divide, and exploit the very alliances that underpin U.S. global strategy.

Moreover, U.S. extended deterrence guarantees are a significant part of U.S. allies own strategic calculus. Allies under the nuclear umbrella have reiterated the importance of relying on the U.S. extended nuclear deterrent for their security. These allies have chosen not to pursue their own nuclear weapons capabilities in exchange for their trust in the nuclear deterrent provided by the United States. The decision to develop or forgo such capabilities is complex, with high stakes for these

48 U.S. Department of Defense, *2022 Nuclear Posture Review*, in *2022 National Defense Strategy of the United States of America* (2022), p. 8.

49 Thomas Schelling, *Arms and Influence* (New Haven, CT: Yale University Press, 1966); Henry Kissinger, *The Troubled Partnership: A Re-Appraisal of the Atlantic Alliance* (New York, NY: McGraw Hill, 1965).

nations as they navigate nuclear threats.[50] During the Cold War, some allies were actively seeking nuclear capabilities but abandoned these plans in return for U.S. assurances, while others never intended to pursue them at all. Today, as General Anthony Cotton, Commander of United States Strategic Command (USSTRATCOM) has noted, "Our allies and partners are counting on us more than ever, and [they rely on] the assurance and deterrence we do daily."[51]

Washington has taken on more security obligations in the post-Cold War era, mainly due to the enlargement of NATO, and there is always the possibility that it could shoulder additional burdens in the future, particularly if new dangers emerge. However, recognizing the risks of extending deterrence, there has been a growing number of scholars that have argued that such commitments, and U.S. alliances in general, are dangerous and should be abandoned. In this view, U.S. alliances are not valuable assets but rather "transmission belts for war."[52] That is, the United States could be drawn into a war either due to attacks on its allies by an adversary or because of reckless actions taken by its allies that lead to conflict. Others have

50 For example, during the Cold War, there were intense and highly contentious debates in West Germany regarding the decision to join the NPT as a Non-Nuclear Weapon State in exchange for U.S. nuclear protection. Many senior government officials and Members of Parliament expressed strong opposition to forgoing the option of developing an independent nuclear arsenal. They questioned the wisdom of relying solely on the U.S. nuclear umbrella, fearing that such dependence could leave West Germany vulnerable in the future. See William Burr, ed., *The Nuclear Nonproliferation Treaty and the German Nuclear Question Part II, 1965-1969*, Briefing Book #622, National Security Archive (March 21, 2018). https://nsarchive.gwu.edu/briefing-book/nuclear-vault/2018-03-21/nuclear-nonproliferation-treaty-german-nuclear-question-part-ii-1965-1969. Accessed March 17, 2025.

51 Tech. Sgt. Nick Z. Erwin, "DOD leaders discuss future of Air Force nuclear deterrent systems," U.S. Airforce Global Strike Command, Secretary of the Air Force Public Affairs (September 22, 2024). https://www.afgsc.af.mil/News/Article-Display/Article/3915301/dod-leaders-discuss-future-of-air-force-nuclear-deterrent-systems/. Accessed October 9, 2024.

52 This phrase is often attributed to Earl C. Ravenal but appears in numerous works. He notes in his 1980 piece, "In a world faced with risks of nuclear destruction, where geopolitics is becoming a prohibitively expensive game, we should be looking for ways to unlink: to minimize provocations; to let regional conflicts burn themselves out; to suppress commitments engendered by alliances which are not barriers to war but transmission belts for war." See Earl C. Ravenal, "Can Non-Intervention Survive Afghanistan?" CATO Policy Analysis, no. 3 (Washington, DC: CATO Institute, June1980). https://www.cato.org/sites/cato.org/files/pubs/pdf/pa-00b.pdf. Accessed October 2, 2024; Christopher Layne, *The Peace of Illusions: American Grand Strategy from 1940 to the Present* (Ithaca, NY: Cornell University Press, 2006), p. 169; Eric A. Nordlinger, *Isolationism Reconfigured: American Foreign Policy for a New Century* (Princeton, NJ: Princeton University Press, 1995), p. 16.

acknowledged the asymmetries in burden sharing[53] and have observed that allies are "free riding." As Posen argued, U.S. alliances "have provided U.S. partners in Europe and Asia with such a high level of insurance that they have been able to steadily shrink their militaries and outsource their defense to Washington."[54] While withdrawal from these alliances (both conventional and nuclear) would undermine other U.S. national security goals, including nonproliferation, Posen and others have reflected on the risk of "roping the United States into conflicts over strategically marginal territory"[55,56] and even "entangling the United States in a war with a nuclear-armed adversary."[57,58] According to these scholars, the United States should

53 Hans Binnendijk, *Friends, Foes, and Future Directions: U.S. Partnerships in a Turbulent World: Strategic Rethink* (Santa Monica, CA: RAND Corporation, 2016), pp. 68, 84-90. https://www.rand.org/pubs/research_reports/RR1210.html. Accessed November 14, 2024.

54 Barry R. Posen, "Pull Back: The Case for a Less Activist Foreign Policy," *Foreign Affairs* 92, no. 1 (January/February 2013), p. 122. https://www.foreignaffairs.com/articles/united-states/2013-01-01/pull-back. Accessed November 14, 2024.

55 Ibid.

56 There is also substantial scholarly literature arguing that the dynamics of escalation are not as severe as Posen claimed, and that the United States has numerous strategies available to mitigate these dangers. For counterarguments, see Neil Narang and Rupal N. Mehta, "The Unforeseen Consequences of Extended Deterrence: Moral Hazard in a Nuclear Protégé," *Journal of Conflict Resolution* 63, no. 1, (2019), pp. 218-250. https://doi.org/10.1177/0022002717729025. Accessed November 14, 2024.

57 Jennifer Lind, "Keep, Toss, or Fix? Assessing U.S. Alliances in East Asia," in Jeremi Suri, and Benjamin Valentino, eds. *Sustainable Security: Rethinking American National Security Strategy* (New York, NY: Oxford Academic, 2016), pp. 28. https://tobinproject.org/sites/default/files/assets/Lind%20-%20Keep%2C%20Toss%2C%20or%20Fix.pdf. Accessed October 2, 2024.

58 While a lot of the literature assumes that alliances entangle the United States in military conflicts that it might otherwise avoid, some argue that U.S. entanglement in conflicts is uncommon because the United States can navigate its alliance agreements to avoid commitments that threaten its interests. See Michael Beckley, "The Myth of Entangling Alliances: Reassessing the Security Risks of U.S. Defense Pacts," *International Security* 39, no. 4 (Spring 2015), pp. 22–24. https://doi.org/10.1162/ISEC_a_00197. Accessed October 9, 2024.

reduce the risks of being dragged into a conflict by revising,[59] scaling back,[60] or scrapping altogether its alliance network.[61] In recent years, some analysts have even called for the United States to support "friendly proliferation" among our allies, such as South Korea.[62] Any of these measures, if implemented, would constitute one of the biggest shifts in U.S. foreign policy and grand strategy. Chapter 5 will further discuss these strategy options in more detail.

Allies Covered by the U.S. Nuclear Umbrella

The alliance structure of the United States is complex, encompassing various treaties and security arrangements with allies and partners. Explicit nuclear guarantees are not provided universally to all U.S. allies. The following allies are beneficiaries of explicit nuclear deterrence guarantees from the United States, based on formal treaties:

- 1949 North Atlantic Treaty (also known as the Washington Treaty) derives

59 For a discussion on revision of U.S. alliances, see Barry R. Posen, *Restraint: A New Foundation for U.S. Grand Strategy* (Ithaca, NY: Cornell University Press, 2014); Stephen M. Walt, *Taming American Power: The Global Response to U.S. Primacy* (New York: W.W. Norton, 2005).

60 Paul V. Kane, "To Save Our Economy, Ditch Taiwan," *The New York Times* (November 11, 2011). https://www.nytimes.com/2011/11/11/opinion/to-save-our-economy-ditch-taiwan.html. Accessed November 21, 2024; Joseph M. Parent and Paul K. MacDonald, "The Wisdom of Retrenchment: America Must Cut Back to Move Forward," *Foreign Affairs* 90, no. 6 (November/December 2011), pp. 32–47. https://www.jstor.org/stable/23039627. Accessed March 4, 2025.

61 Eugene Gholz, Daryl G. Press, and Harvey M. Sapolsky, "Come Home, America: The Strategy of Restraint in the Face of Temptation," *International Security* 21, no. 4 (Spring 1997), pp. 5-48. https://doi.org/10.1162/isec.21.4.5 (accessed November 21, 2024); Benjamin H. Friedman, Brendan Rittenhouse Green, and Justin Logan, "Correspondence: Debating American Engagement—The Future of U.S. Grand Strategy," *International Security* 38, no. 2 (Fall 2013), pp. 183-192, https://oar.princeton.edu/bitstream/88435/pr1b502/1/International%20Security.pdf (accessed November 5, 2024).

62 Doug Bandow, "America Should Consider Friendly Proliferation," CATO Institute, August 5, 2016, https://www.cato.org/blog/america-should-consider-friendly-nuclear-proliferation. Accessed December 13, 2024; Doug Bandow, "America's Asian Allies Need Their Own Nukes," *Foreign Policy*, December 30, 2020, https://foreignpolicy.com/2020/12/30/nuclear-weapons-china-great-power-competition-asia/. Accessed December 13, 2024; Robert E. Kelly and Min-hyung Kim, "Why South Korea Should Go Nuclear: The Bomb is the Best Way to Contain the Threat from the North," *Foreign Affairs*, December 30, 2024. https://www.foreignaffairs.com/north-korea/why-south-korea-should-go-nuclear-kelly-kim?utm_medium=newsletters&utm_source=fatoday&utm_campaign=Why%20South%20Korea%20Should%20Go%20Nuclear&utm_content=20251230&utm_term=EDZZZ003ZX. Accessed December 30, 2024.

its authority from Article 51 of the UN Charter, affirming the inherent right to collective defense. Article 5 of the Washington Treaty states that an armed attack against one member is an attack against all, obligating mutual assistance and creating a deterrent effect against aggression against any NATO ally.[63]

- 1951 Australia, New Zealand,[64] and United States Security (ANZUS) Treaty establishes that an armed attack in the Pacific against either party shall be met with mutual aid, creating a framework for collective defense and deterrence in the region.[65]
- 1953 Mutual Defense Treaty between the United States and the Republic of South Korea obligates both parties to assist each other in the event of an armed attack, reinforcing deterrence against North Korea. Article 3 allows for U.S. military presence in South Korea for mutual defense purposes.[66]
- 1960 Treaty of Mutual Cooperation and Security between Japan and the United States of America recognizes that an armed attack against either Party would be dangerous to peace and safety, and it commits both nations "act to meet the common danger in accordance with its constitutional provisions and processes."[67]

Additionally, the United States maintains bilateral relations with a diverse group of states; however, there are no formal treaties, like those mentioned above, that establish a security relationship and explicitly extend U.S. nuclear deterrence to another state.

Despite this, all the United States' allies and partners are covered by U.S. nuclear declaratory policy, which is issued by the president of the United States. As stated in the 2022 NPR, U.S. declaratory policy states:

63 "North Atlantic Treaty," 34 U.N.T.S. 24, Art. 5 (April 4, 1949). https://www.nato.int/cps/en/natohq/official_texts_17120.htm. Accessed October 2, 2024.

64 Since 1985, U.S. extended nuclear deterrence commitments no longer apply to New Zealand. More information is available in Chapter 3 of this paper.

65 "Security Treaty between the United States, Australia, and New Zealand (ANZUS), 3 U.S.T 3423-3425, Arts. 4 and 5 (September 1, 1951). https://avalon.law.yale.edu/20th_century/usmu002.asp. Accessed October 2, 2024.

66 "Mutual Defense Treaty between the United States and the Republic of Korea," 5 U.S.T 23602376, Art. 3 (October 1, 1953). https://www.usfk.mil/Portals/105/Documents/SOFA/H_Mutual%20Defense%20Treaty_1953.pdf. Accessed October 2, 2024.

67 "Treaty of Mutual Cooperation and Security between Japan and the United States of America," 2 U.S.T 1632, Art. 5 (January 19, 1960). https://www.mofa.go.jp/region/n-america/us/q&a/ref/1.html. Accessed October 2, 2024.

> "As long as nuclear weapons exist, the fundamental role of nuclear weapons is to deter nuclear attack on the United States, our Allies, and partners. 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."[68]

While this may not explicitly constitute a U.S. commitment to employ nuclear weapons on behalf of others, nor does it impose a formal obligation to take specific actions, it is important to acknowledge that different countries may interpret or hold varying expectations regarding the scope and implications of these assurances. Other bilateral agreements create U.S. obligations toward some countries, such as Taiwan, Israel, the Philippines, and Ukraine. These agreements are more ambiguous but remain critically important, especially in the current geopolitical environment. For example, the United States lacks a formal defense agreement with Taiwan, instead adhering to the 1979 Taiwan Relations Act, which recognizes Taiwan as part of China while opposing any use of military force by China to assert control, leaving potential U.S. intervention in the event of a Chinese attack on Taiwan ambiguous.[69] Unlike Taiwan, the Philippines is a declared military ally of the United States, established by the 1951 U.S.–Philippines Mutual Defense Treaty. This military cooperation has primarily focused on counterterrorism since the Cold War, and, since 2015, it has increasingly addressed rising territorial disputes in the South China Sea, with no explicit extended nuclear deterrence guarantee.[70] Moreover, the United States has a longstanding arrangement with Israel that provides a unique degree of military and economic assistance though it is legally under no obligation to come to Israel's aid in the event of an attack. While there have been no formal calls for Israel to ask for a formal U.S. extended deterrent guarantee,

68 U.S. Department of Defense, *2022 Nuclear Posture Review*, in *2022 National Defense Strategy of the United States of America* (2022), p. 9.

69 Caitlin Campbell, "Taiwan: Defense and Military Issues," Congressional Research Services Report (updated August 15, 2024). https://www.congress.gov/crs_external_products/IF/PDF/IF12481/IF12481.14.pdf. Accessed October 3, 2024.

70 Javier C. Hernandez, "Warily Eyeing China, Philippines May Invite U.S. Back to Subic Bay," *The New York Times* (September 19, 2015), https://www.nytimes.com/2015/09/20/world/warily-eyeing-china-philippines-may-invite-us-back-to-subic-bay.html (accessed October 7, 2024); Prashanth Parameswaran, "Philippines to Revive Former US Naval Base Near South China Sea in 2016," *The Diplomat* (July 17, 2015), https://thediplomat.com/2015/07/philippines-to-reopen-former-us-naval-base-near-south-china-sea-in-2016/ (accessed October 7, 2024).

some have posited whether Israel would be interested if Iran were to go nuclear.[71] Lastly, Ukraine is not a treaty ally; rather, it is a partner. The United States provided some negative security assurances in the 1990s with the signing of the Budapest Memorandum, but no positive assurances have been made.[72]

How We Know When Allies Are Assured

U.S. allies are not monolithic; they represent a diverse group of nations with varying security interests, values, and cultures. Determining when and if they are effectively assured requires careful evaluation of their unique needs, perceptions, and the extent to which U.S. commitments address their specific concerns.

Determining whether allies feel assured by U.S. extended deterrence commitments involves several key factors and indicators. First, public statements and diplomatic engagement, such as official communications, high-level meetings, and other diplomatic channels, can indicate their confidence or concerns in these commitments. Regular participation in joint exercises and defense cooperation agreements further signal trust, as they demonstrate readiness to respond together.

Second, allies' perceptions of external threats also influence their confidence in extended deterrence. One challenge is that threat perceptions between the United States and its allies may differ and not fully converge. For example, what is considered existential for some allies and partners, such as the Ukraine-Russia War for Kyiv, may not be viewed as an existential threat by the United States, which perceives it more as a local or regional war. Additionally, as Lee notes, the United States and South Korea have very different threat perceptions of China and North Korea, with the United States viewing North Korea as a secondary threat

71 Gregory Weaver and Asmeret Asghedom, "Chapter 12: The Limited Prospects for U.S. Extended Deterrence in the Middle East," in Asmeret Asghedom, ed., *The Nuclear Future of the Middle East* (Livermore, CA: Center for Global Security Research, January 2025), pp. 174-177. https://cgsr.llnl.gov/sites/cgsr/files/2025-01/occasional-paper-nuclear-middle-east_0.pdf. Accessed March 4, 2025.

72 The assurances outlined in the Budapest Memorandum—signed by the United States, Russia, and the United Kingdom—influenced Ukraine's decision to join the NPT. Gottemoeller emphasizes the three signatories reaffirmed their commitment to refrain from the use of threats or force against Ukraine's territorial integrity and political independence, upon the condition that Ukraine relinquished its nuclear weapons stockpile to Russia. See Rose Gottemoeller, "Should Ukraine Have Kept Nuclear Weapons?" *Foreign Service Journal*, American Foreign Service Association (October 2022). https://afsa.org/should-ukraine-have-kept-nuclear-weapons. Accessed October 7, 2024.

to China, while South Korea sees China as a secondary threat to North Korea.[73] Of course, formal diplomatic exchanges can reveal how an ally is viewing the security environment, but informal dialogues and discussions among think tanks and experts (i.e., Track II diplomacy) also play an important role in increasing an understanding of the underlying sentiments about allies' threat perception and their confidence in extended deterrence. Since there are potential sources of friction that need to be managed, U.S. policymakers sometimes refer to these efforts as alliance management.

Third, though sometimes perceived as extraneous to alliance dynamics, domestic political factors in an allied nation also strongly influence confidence levels, particularly the role of public opinion and domestic ideology. Some European allies[74] have felt constrained by public opposition to strengthen nuclear deterrence, especially amid support for nuclear disarmament.[75] This was especially prominent during the Cold War and one of the reasons[76] for the 1979 dual-track decision.[77] However, in recent years, the impact of public opinion has become even more

73 Manseok Lee, "China's Rise and Nuclear Debate in Korea," in Brad Roberts, ed., *Deterring a Nuclear-Armed North Korea* (Livermore, CA: Center for Global Security Research, 2023), p. 50. https://cgsr.llnl.gov/content/assets/docs/230427_CGSR_Deterring_Nuclear_Armed_North_Korea.pdf. Accessed October 7, 2024.

74 For example, in the 1980s, there was significant domestic opposition in many NATO allied countries, specifically West Germany, to the deployment of new Pershing II and ground-launched cruise missiles (GLCMs), as well as increasingly skeptical views on nuclear weapons in general, especially among Scandinavian allies. This significantly challenged NATO unity as the U.S. decision to eliminate the new GLCM and Pershing II capabilities in the INF Treaty raised questions about the Alliance's strategy. See Stephan Frühling and Andrew O'Neil, *Partners in Deterrence: U.S. Nuclear Weapons and Alliances in Europe and Asia* (Manchester, UK: Manchester University Press, 2021), p. 38.

75 For a robust discussion on transatlantic perspectives on deterrence has evolved considering new strategic and geopolitical realities, see Amelia Morgan and Anna Péczeli, eds., *Europe's Evolving Deterrence Discourse*, Center for Global Security Research (Livermore, CA: Center for Global Security Research, February 2021). https://cgsr.llnl.gov/sites/cgsr/files/2024-08/CGSR_euro_det_final.pdf. Accessed November 8, 2024.

76 Another reason was West Germany's demand for the United States to confront the risk of NATO Europe's potential decoupling from the United States, prompted by Russia's deployment of large intermediate-range nuclear forces (SS-20).

77 "1979-1989: 'Dual Track' Decade - New Weapons, New Talks," NATO SHAPE. https://shape.nato.int/page214610458. Accessed November 8, 2024.

evident as some NATO allies, such as Italy, the Netherlands,[78] and Spain have shown growing public support for the Treaty on the Prohibition of Nuclear Weapons (TPNW).[79] However, there has been a considerable shift, particularly after the onset of the Russia-Ukraine War. According to public opinion surveys conducted by Onderco et al., following Russia's invasion of Ukraine, European citizens have viewed nuclear deterrence more favorably, even shown a greater willingness to potentially use nuclear weapons, and have significantly reduced their support for the withdrawal of nuclear weapons on the continent.[80] While European populations have appeared generally satisfied with U.S. extended deterrence guarantees in the NATO context, according to Bergmann, transatlantic tensions have resurfaced with the onset of President Trump's second term.[81]

In contrast, in South Korea, the public has repeatedly called for Seoul to develop its own nuclear capability in response to a growing North Korean arsenal and threats, raising questions about the credibility of the United States' commitments. However, public sentiment also appears to be swaying. In 2023, the Korea Institute for National Unification (KINU) published the *2023 KINU Unification Survey*, titled "Public Opinion on South Korea's Nuclear Armament Report." The survey revealed that 68.5% of all respondents and 75.6% of People Power Party[82] supporters believed that the nuclear umbrella policy has successfully deterred North Korea

78 Michael Onderco, et al. "When do the Dutch want to join the nuclear ban treaty? Findings of a public opinion survey in the Netherlands," *The Nonproliferation Review* 28, no. 1-3 (2021), pp. 149-163. https://doi.org/10.1080/10736700.2021.1978156. Accessed January 2, 2025.

79 While NATO as an alliance remains firmly opposed to the Treaty on the Prohibition of Nuclear Weapons, there has been growing support for it within many NATO states, including The Netherlands, Italy, and Spain, as evident from public opinion polls, parliamentary resolutions, political party declarations, and statements from past leaders. See Richard Lennane and Tim Wright, "A Non-Nuclear Alliance: Why NATO members should join the UN Ban on Nuclear Weapons," ICAN Publication (June 2021), pp. 63-92. https://www.icanw.org/report_nato_tpnw. Accessed January 2, 2025.

80 Michal Onderco, Michal Smetana, Tom W. Etienne, "Hawks in the making? European public views on nuclear weapons post-Ukraine," *Global Policy* 14, no. 2 (May 2023), pp. 305-317. https://doi.org/10.1111/1758-5899.13179. Accessed November 8, 2024.

81 Max Bergmann, "The Transatlantic Alliance in the Age of Trump: The Coming Collisions," Center for Strategic and International Studies (February 14, 2025). https://www.csis.org/analysis/transatlantic-alliance-age-trump-coming-collisions. Accessed February 25, 2025.

82 The People Power Party, formerly known as the United Future Party (UFP), is a conservative and right-wing political party in South Korea.

from attacking South Korea.[83] While public support for independent South Korean nuclear armament peaked in 2021 at 71.3%,[84] it declined to 69% in 2022 and further dropped to 60.2% in 2023. Additionally, the Russian-Ukraine War appears to not have significant impact on South Korean public opinion on nuclear weapons.[85] Public opinion polls in Europe and Asia regarding nuclear weapons and U.S. extended deterrence will likely continue to fluctuate, reflecting the dynamic nature of assurance and threat perceptions, and their periodic ebbs and flows.

Lastly, the role of past interactions deeply shapes allies' perceptions. If allies have experienced consistent support and continuity in U.S. extended deterrence guarantees, they are more likely to feel assured. While allies have always needed to manage the change in U.S. presidential administrations every four to eight years, in the last several years, this shift has been more pronounced, causing allies to be concerned that the United States will flip-flop its policies. Additionally, the way the United States responds to various crises can influence allies' perceptions of current U.S. extended deterrence commitments, even if a specific ally is not directly involved in the crisis, if the crisis is not in their immediate region, or if it does not

83 When asked, "If you have to choose between the presence of U.S. Forces in Korea and the possession of nuclear weapons for our national defense, which one would you choose?" in 2023, 49.5% chose U.S. forces and 33.8% chose to have nuclear weapons, suggesting South Koreans are more likely to trust the traditional U.S.-ROK alliance and U.S. Forces in Korea. See Sang Sin Lee, et al, "KINU Unification Survey 2023: Public Opinion on South Korea's Nuclear Armament, Survey Period April – May 2023," Korean Institute for National Unification (2023). https://repo.kinu.or.kr/bitstream/2015.oak/14362/1/KINU%20Unification%20Survey%20 2023%20Spring%20Executive%20Summary%20EN%20-%20%EC%B5%9C%EC%A2%85%EB%B 3%B8%280602%29%E2%98%85.pdf. Accessed November 8, 2024.

84 Other surveys noted that in 2021, 71% were in favor of South Korea developing its own nuclear weapons, while 56% support a deployment of U.S. nuclear weapons in South Korea. This survey was conducted December 1-4, 2021, in South Korea among a representative national sample of 1,500 adults 18 and older. The margin of error is ±2.5% at the 95% confidence interval. See Toby Dalton, Karl Friedhoff, and Lami Kim, "Thinking Nuclear: South Korean Attitudes on Nuclear Weapons," Chicago Council on Global Affairs, Carnegie Endowment for International Peace (February 21, 2022). https://globalaffairs.org/sites/ default/files/2022-02/Korea%20Nuclear%20Report%20PDF.pdf. Accessed November 8, 2024.

85 When asked, "If you have to choose between the presence of U.S. Forces in Korea and the possession of nuclear weapons for our national defense, which one would you choose?" in 2023, 49.5% chose U.S. forces and 33.8% chose to have nuclear weapons, suggesting South Koreans are more likely to trust the traditional U.S.-ROK alliance and U.S. Forces in Korea. See Sang Sin Lee, et al, "KINU Unification Survey 2023: Public Opinion on South Korea's Nuclear Armament, Survey Period April – May 2023," Korean Institute for National Unification (2023). https://repo.kinu.or.kr/bitstream/2015.oak/14362/1/KINU%20Unification%20Survey%20 2023%20Spring%20Executive%20Summary%20EN%20-%20%EC%B5%9C%EC%A2%85%EB%B 3%B8%280602%29%E2%98%85.pdf. Accessed November 8, 2024.

involve nuclear weapons. For example, allies have closely watched how the United States withdrew forces from Afghanistan,[86] the U.S. response to Russia's 2022 invasion of Ukraine, and U.S. efforts to support Israel as it battles Hamas. Indeed, many factors influence whether allies feel assured and confident in the United States' commitment, but continuous engagement and transparent communication undoubtedly remain top priorities for assuring U.S. allies.

During the Cold War, the effectiveness of extended deterrence was shaped by perception, credibility, and differing viewpoints among allies and adversaries. Some argued that deploying additional nuclear forces in Europe to deter the Soviet Union could weaken assurances for European allies, who viewed nuclear war as a greater threat than Soviet expansionism. For example, in 1956, Europeans were skeptical of the United States' strategy of "retaliation."[87] Instead, allies such as Britain, France, and West Germany preferred that the United States deployed conventional forces—divisions of American troops capable of directly confronting the Red Army and engaging in traditional warfare rather than resorting to nuclear options. The Europeans doubted that the United States would go all-out nuclear, while also fearing the outbreak of a global nuclear war.[88]

Moreover, the Cold War demonstrated how extended deterrence agreements were certainly not permanent, and some allies may never be fully reassured by the United States. History also emphasizes that any failure in assuring allies does not occur in an instant; rather, it is a cumulative issue that develops over time. For example, France's decision to pursue a nuclear program, initially considered in 1945 and solidified in the 1950s, was significantly influenced by its doubts about U.S. commitment to its allies, particularly during the Diên Biên Phu crisis

86 Asma Khalid, "How U.S. Allies View the Country a Year After its Withdrawal from Afghanistan," NPR (August 29, 2022), https://www.npr.org/2022/08/29/1119973093/how-u-s-allies-view-the-country-a-year-after-its-withdraw-from-afghanistan (accessed November 21, 2024); John Hudson and Missy Ryan, "Withdrawal from Afghanistan forces allies and adversaries to reconsider America's global role," *The Washington Post* (August 17, 2021), https://www.washingtonpost.com/national-security/withdrawal-from-afghanistan-forces-allies-and-adversaries-to-reconsider-americas-global-role/2021/08/17/2808ddbc-ff84-11eb-825d-01701f9ded64_story.html (accessed November 21, 2024).

87 The criticism of "massive retaliation" was that it had become incredible as the USSR was approaching nuclear parity. Some Europeans were also critical of the successor concept, "flexible response," because they feared that Washington was cutting its nuclear guarantee.

88 Evan Thomas, *Ike's Bluff: President Eisenhower's Secret Battle to Save the World*, (New York, NY: Little, Brown and Company, 2012), pp. 201-203.

in 1954.[89] Additionally, the Suez crisis in 1956 highlighted constraints on national autonomy under American influence. These concerns grew after the first Soviet intercontinental missile test in August 1957 and the launch of Sputnik I in October 1957, which raised fears about American territorial vulnerability. By the late 1950s, France grew increasingly dissatisfied with U.S. dominance in NATO and its reliance on nuclear strategies, which it believed did not sufficiently address French security concerns. This dissatisfaction reinforced France's determination to pursue greater strategic autonomy within NATO.[90] While France relied on a shared NATO nuclear stockpile for several years, as did other NATO nations, Paris eventually lost confidence and developed its own nuclear capabilities. As French President Charles de Gaulle proclaimed, "the view of a war and even of a battle in which France would no longer act on her own behalf, and in accordance with her own wishes, such a view is unacceptable."[91] Ultimately, President de Gaulle doubted that the United States would use nuclear weapons to defend its European allies, leading him to withdraw from NATO's integrated military command and develop an independent nuclear deterrent.[92]

One way to address these various perceptions of assurance requirements is by categorizing them into positive and negative forms. According to Lyon, broadly speaking, positive assurance involves specific commitments made by one country to another, whereas negative assurance pertains to a country's commitment to

89 Bruno Tertrais, *French Nuclear Deterrence Policy, Force and Future: A Handbook*, Recheres & Documents N°4/2020 (Paris, France, Foundation pour la Recherche Stratégique, updated February 2020), p. 5. https://www.frstrategie.org/sites/default/files/documents/publications/recherches-et-documents/2020/202004.pdf. Accessed October 11, 2024.

90 Several other factors were at play in shaping France's approach to nuclear policy and its pursuit of autonomy. One key factor was the desire for strategic independence, driven by the belief that France must never again face an existential threat like it did during World War II. Another factor was the perception that the United States and the United Kingdom were excluding France from critical nuclear cooperation and other important decisionmaking processes, particularly within NATO. This sense of marginalization fueled French determination to chart its own course. Additionally, President Charles de Gaulle was deeply dissatisfied with how the United States responded to his ideas about international security and the global balance of power. De Gaulle's vision of a more multipolar world, where France could assert its sovereignty and play a leading role, clashed with the U.S.-dominated security framework, further motivating France to develop an independent nuclear deterrent.

91 Jean Lacouture, *De Gaulle: The Ruler, 1945-1970*, trans. Alan Sheridan (New York, NY: W. W. Norton and Company, 1992), p. 416.

92 For a comprehensive history on France's decisions to pursue its own nuclear deterrent, see Bruno Tertrais, *French Nuclear Deterrence Policy, Force and Future: A Handbook*, Recheres & Documents N°4/2020 (Paris, France, Foundation pour la Recherche Stratégique, updated February 2020), p. 5.

refrain from certain actions towards another country.[93] Knopf has supported this view, stating that assurances are promises meant to convey future commitments. According to his argument, these promises "involve declarations or signals meant to convey a commitment to take or refrain from taking certain actions in the future."[94] In regard to nuclear weapons, negative security assurances are the promise of Nuclear-Weapon States (NWS) not to use or threaten to use nuclear weapons against Non-Nuclear-Weapon States (NNWS). In contrast, a positive security assurance is a guarantee by a NWS that it will come to the aid of a NNWS if it is attacked by another state with nuclear weapons.[95] U.S. nuclear policy has consistently reaffirmed positive and negative security assurances. As stated in the 2022 NPR, "The United States will not use or threaten to use nuclear weapons against NNWS that are party to the NPT and in compliance with their nuclear nonproliferation obligations."[96] This has been a consistent U.S. policy for decades.

Moreover, when considering extended deterrence and assurance, it is helpful to focus on both software and hardware.[97] Software includes declaratory policy,

93 Rod Lyon, "The Challenges Confronting US Extended Nuclear Assurance in Asia," *International Affairs (The Royal Institute of International Affairs)* 89, no. 4 (July 2013), pp. 929-941.https://www.jstor.org/stable/23479401. Accessed October 2, 2024.

94 Jeffrey W. Knopf, *Security Assurances and Nuclear Nonproliferation* (Stanford, CA: Stanford University Press, 2012), p. 3.

95 In 1968, the UN Security Council adopted Resolution 255, addressing the concerns of NNWS regarding their security after joining the NPT. This resolution provided positive security assurances, stating that certain states would offer immediate assistance to any NNWS that faced aggression involving nuclear weapons. While this assurance aimed to encourage NPT participation, NNWS soon sought legally binding negative security assurances for greater protection. The first of these was established in the Treaty of Tlatelolco (1969), which created a nuclear weapon-free zone in Latin America and the Caribbean.

96 U.S. Department of Defense, *2022 Nuclear Posture Review*, in *2022 National Defense Strategy of the United States of America* (2022), p. 9.

97 In March 2023, Roberts outlined both the software and hardware of extended nuclear deterrence to the U.S. Senate Armed Services Committee (SASC). See "U.S. Committee on Armed Services United States Senate Hearing to Receive Testimony on Regional Nuclear Deterrence, Statement of Brad Roberts, Ph.D., Director of the Center for Global Security Research, Lawrence Livermore National Laboratory," (March 28, 2023). https://www.armed-services.senate.gov/hearings/to-receive-testimony-on-regional-nuclear-deterrence. Accessed October 2, 2024.

statements of presidential intent,[98] consultative mechanisms, operational plans, concepts and principles for deterrence and nuclear weapons employment, and exercises that demonstrate these concepts and capabilities. Santoro and Warden have echoed this sentiment, noting that assurance can take various forms, including dialogues, joint planning, and strengthening relationships. They have also emphasized that in both Europe and Asia, the presence of the U.S. military plays a crucial role in providing assurance.[99] Today, hardware for extended deterrence includes nuclear weapons and dual-capable aircraft (DCA) forward deployed in Europe and elsewhere in the world if needed in time of crisis and conflict, as well as U.S. strategic forces, which serve as "the ultimate backstop" to deter attacks on U.S. allies and partners who rely on extended deterrence.[100] The software and hardware in both Europe and Asia will be discussed further in Chapters 2 and 3.

Extended Nuclear Deterrence in U.S. Nuclear Posture Reviews: Policy Changes and Continuities

Over the last three presidential administrations (2009-2024), extended deterrence has consistently remained a cornerstone of U.S. national security strategy, as reflected in their respective *Nuclear Posture Reviews*. Each administration prioritized strengthening extended nuclear deterrence in response to evolving global threats. Across these three administrations' reviews, the bipartisan consensus on the importance of extended nuclear deterrence is noteworthy as it has facilitated progress with each administration building upon the previous administrations' work in significant ways. All three administrations have recognized that the commitment to extended nuclear deterrence not only serves to reassure allies but also plays a crucial role in promoting nonproliferation and deterring

98 For example, President Obama made the U.S. commitment to preserve the U.S. nuclear umbrella clear in 2009 in Tokyo, when he stated: "So long at these [nuclear] weapons remain, the United States will maintain a strong and effective nuclear deterrent that guarantees the defense of our allies—including South Korea and Japan." See "Remarks by President Barack Obama at Suntory Hall, Tokyo, November 14, 2009," The White House, Office of the Press Secretary (November 2009). https://obamawhitehouse.archives.gov/the-press-office/remarks-president-barack-obama-suntory-hall. Accessed November 14, 2024.

99 David Santoro and John K. Warden, "Assuring Japan and South Korea in the Second Nuclear Age," *Washington Quarterly* 38, no. 1 (Spring 2015), pp. 147-165. DOI:10.1080/01636 60X.2015.1038182. Accessed November 14, 2024.

100 U.S. Department of Defense, *2022 Nuclear Posture Review*, in *2022 National Defense Strategy of the United States of America* (2022), p. 9.

potential adversaries in an increasingly uncertain world.

2010 Nuclear Posture Review

The Obama administration (2009-2017) articulated its approach toward extended nuclear deterrence through several key initiatives, emphasizing the importance of reassuring allies while pursuing nuclear arms reduction and eventual disarmament. The 2010 NPR positioned extended deterrence and assurance at the center of U.S. strategy, slightly contrasting with the approaches of the Clinton and Bush administrations.[101] The 2010 NPR reaffirmed the U.S. commitment to maintaining a credible nuclear deterrent to protect allies, particularly in Europe and Asia, against threats from adversaries like Russia and North Korea. This focus reflected the reality that U.S. allies are on the front lines of regional deterrence and strategic stability challenges. The administration consistently communicated that the U.S. nuclear umbrella was essential for the security of NATO and other allies, emphasizing collective defense at various NATO summits, including the 2010 Lisbon Summit. Additionally, the administration engaged in bilateral security dialogues with allies in Asia, enhancing military cooperation and demonstrating U.S. commitment through exercises and deployments.

One important result from the 2010 NPR was the improved cooperation between the United States, Japan, and the ROK. This was most evident in 2009 when the NPR was conducted, and the Obama administration encouraged various stakeholders to express their views. These consultations focused heavily on U.S. declaratory policy and on U.S. capabilities for extended nuclear deterrence. The Obama administration carefully considered the views of allies before retiring the Tomahawk land-attack cruise missile (TLAM-N), as well as rejecting "no-first-use" and "sole purpose"

101 For example, the Bush administration's 2001 NPR emphasized that existing and emerging nuclear powers present different threats to the United States and its allies compared to the Cold War. While deterring nuclear attacks remained a primary objective, the U.S. nuclear arsenal was viewed as playing a broader role in ensuring global security. The 2001 NPR outlined a role for nuclear weapons in "assurance, dissuasion, and defeat," concepts introduced in the 2001 Quadrennial Defense Review. Essentially, the NPR recognized that U.S. nuclear forces were crucial in providing security guarantees to friends and allies without their own nuclear capabilities, especially when facing threats from hostile neighbors or adversaries.

formulations for U.S. declaratory policy.[102] Additionally, in conclusion of the NPR, the United States, Japan, and South Korea assessed that high-level dialogues should be sustained. Therefore, the U.S. and Japan founded the Extended Deterrence Dialogue (EDD), and the United States and South Korea founded the Extended Deterrence Policy Committee (EDPC). These consultative groups will be discussed further in Chapter 3.

The review also expressed a commitment to tailor the nuclear component of the regional deterrence architecture to meet the specific requirements of each region where the United States provides security guarantees, calling for modernization of the U.S. nuclear arsenal alongside arms reduction efforts. This solidified the administration's focus on the role of nuclear weapons in protecting the security interests of U.S. allies. While reaffirming extended deterrence, the Obama administration also prioritized nonproliferation efforts and pursued arms control agreements, such as the New START treaty with Russia, aiming to reduce deployed strategic nuclear weapons while maintaining a credible deterrent. The administration also committed to not changing U.S. extended deterrence capabilities without close consultations with our allies and partners.[103] Moreover, in its revised nuclear employment strategy, it reiterated that "as long as nuclear weapons exist, the United States will maintain a safe, secure, and effective arsenal that guarantees the defense of the United States and our allies and partners."[104]

2018 Nuclear Posture Review

The first term of the Trump administration (2017-2021) emphasized the necessity of reassuring allies and stressed the U.S. commitment to NATO and

102 A no-first-use declaratory policy would be the commitment by the United States to refrain from using nuclear weapons unless they are first attacked with nuclear weapons. The Sole Purpose formulation would have reduced the role of nuclear weapons in U.S. deterrence strategy to the sole purpose of deterring an attack on the United States or its allies, thereby eliminating their role in deterring attacks on vital interests by other means, including chemical and biological weapons, or large-scale conventional attacks. See Brad Roberts, "Debating Nuclear No-First-Use, Again," *Survival* 61, no. 3 (2019), pp. 39-56. https://cgsr.llnl.gov/sites/cgsr/files/2024-08/Debating-Nuclear-No-first-use-Again.pdf. Accessed November 14, 2024.

103 U.S. Department of Defense, *2010 Nuclear Posture Review*, p. 28. https://www.defense.gov/portals/1/features/defensereviews/npr/2010_nuclear_posture_review_report.pdf. Accessed September 27, 2024.

104 "Fact Sheet: Nuclear Weapons Employment Strategy of the United States," Office of the Press Secretary, The White House (June 19, 2013). https://obamawhitehouse.archives.gov/the-press-office/2013/06/19/fact-sheet-nuclear-weapons-employment-strategy-united-states. Accessed September 27, 2024.

allies and partners in the Asia-Pacific region as "unwavering."[105] The 2018 NPR emphasized that the United States will ensure the credibility and effectiveness of its extended deterrence commitments.[106] The administration focused on countering aggressive actions from adversaries like Russia, China, North Korea, and Iran, reinforcing the U.S. commitment to extended deterrence as a means of "tailored assurance." As the 2018 NPR notes, "conventional forces alone are inadequate to assure many allies who rightly place enormous value on U.S. extended nuclear deterrence for their security."[107] Notably, the administration notes that there is no "one size fits all" for assurance and that assurance measures must continually adapt to the shifting requirements of a highly dynamic threat environment.[108] The 2018 NPR also reiterated that, "effectively assuring allies and partners depends on their confidence in the credibility of U.S. extended nuclear deterrence, which enables most to eschew possession of nuclear weapons, thereby contributing to U.S. non-proliferation goals."[109]

The 2018 NPR noted various efforts that the United States would work cooperatively with NATO allies on. These included enhancing readiness and survivability of NATO DCA; promoting the broadest possible participation of Allies in the agreed burden sharing arrangements regarding the DCA mission, nuclear mission support, and nuclear infrastructure; replacing aging aircraft and weapons systems with modernized or life-extended equivalents as they age out; enhancing training and exercise programs to ensure Allies can effectively integrate nuclear and non-nuclear operations; and ensuring the NATO NC3 system is modern, survivable, resilient, and flexible.[110]

In the Asia-Pacific region, the Trump administration committed to maintaining integrated, flexible, and adaptable U.S. nuclear and non-nuclear capabilities; continued investment in missile defenses against North Korean missile threats; joint military exercises with allies; and continued consultative dialogues with Asia-Pacific

105 U.S. Department of Defense, *2018 Nuclear Posture Review*, pp. 35-36. https://media.defense.gov/2018/feb/02/2001872886/-1/-1/1/2018-nuclear-posture-review-final-report.pdf. Accessed September 27, 2024.

106 Ibid., p. 22.

107 Ibid., pp. vi-vii.

108 Ibid., p. 35.

109 Ibid., p. viii.

110 Ibid., p. 36.

allies to improve "our shared understanding of nuclear dangers and corresponding deterrence requirements."[111]

Lastly, allies in both regions generally viewed the 2018 NPR's recommendation of restoring the SLCM-N (Sea-Launched Cruise Missile-Nuclear) favorably as a means of strengthening deterrence against potential adversaries like Russia and China.

2022 Nuclear Posture Review

During the Biden administration (2021-2024), the commitment to extended deterrence was particularly pronounced as it focused on assuring allies in an increasingly complex security environment shaped by threats from Russia and China. The Biden administration understood the need to modernize and strengthen these alliances and partnerships in material ways to improve the United States' strategic position. Like the 2018 NPR, the Biden administration's 2022 NPR emphasized a flexible and tailored deterrent strategy, reaffirming the U.S. commitment to its NATO allies and allies and partners in the Indo-Pacific region.[112] The 2022 NPR states that "as long as Allies and partners face nuclear threats, extended nuclear deterrence will remain a pillar of regional security architectures."[113]

Notably, the Biden administration emphasized that the security architectures in the Euro-Atlantic and Indo-Pacific regions are critical to U.S. strategic advantage over governments that challenge the rules-based international order.[114] Similar to both the Obama and Trump administrations, the Biden administration also highlighted the U.S. commitment to strengthening deterrence in ways that are responsive to changes in the regional security environment. And toward that end, the United States reaffirmed that it would work with allies and partners in the Indo-Pacific to "ensure an effective mix of capabilities, concepts, deployments, exercises, and tailored options to deter and, if necessary, respond to coercion and aggression."[115]

111 Ibid., p. 37.

112 In particular, in the Indo-Pacific region the United States' bilateral alliances reached new heights, with the administration concluding the Washington Declaration with South Korea, advancing deterrence discussions with Japan, and signing AUKUS to integrate the United States, United Kingdom and Australia's industrial bases to produce conventionally armed, nuclear-powered submarines and increase cooperation on advanced capabilities, including AI, autonomous platforms, and electronic warfare.

113 U.S. Department of Defense, *2022 Nuclear Posture Review*, in *2022 National Defense Strategy of the United States of America* (2022), p. 14.

114 Ibid., p. 1.

115 Ibid., p. 15.

In terms of assurance, the 2022 NPR emphasized that effective assurance of allies and partners is grounded in a "shared view of the security environment and deterrence challenges; a commitment to risk- and burden-sharing; modern and effective nuclear forces; robust consultation processes;[116] and confidence that the United States has the will and capability to meet its security commitments."[117]

Also like the Obama and Trump administrations, based on allied consultations, the Biden administration rejected both No-First-Use and Sole Purpose declaratory policies.[118] Instead, the 2022 NPR states, "As long as nuclear weapons exist, the fundamental role of U.S. nuclear weapons is to deter nuclear attack on the United States, our Allies, and partners. 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."[119]

The 2022 NPR notably cancelled SLCM-N, citing "it was no longer necessary" given the deterrence contribution of the W76-2, uncertainty regarding its leverage in an arms control agreement with the Russians on non-strategic nuclear weapons, as well as its estimated costs.[120] Despite this, Congress overrode the administration's decision and allocated funding for its development.

116 Moreover, the Biden administration's 491 Report, submitted to Congress in accordance with 10 U.S.C. Section 491, reflects an unclassified description of presidential nuclear employment guidance. Updated elements from the previous employment guidance included, "enabling deeper consultation, coordination, and combined planning with NATO and Indo-Pacific allies and partners in order to strengthen U.S. extended deterrence commitments." See "Report on the Nuclear Employment Strategy of the United States, Submitted pursuant to 491(a) of Title 10, U.S. Code" (November 2024). https://media.defense.gov/2024/Nov/15/2003584623/-1/-1/1/REPORT-ON-THE-NUCLEAR-EMPLOYMENT-STRATEGY-OF-THE-UNITED-STATES.PDF. Accessed November 18, 2024.

117 U.S. Department of Defense, *2022 Nuclear Posture Review*, in *2022 National Defense Strategy of the United States of America* (2022), p. 14.

118 The last three NPRs have emphasized the importance of consultations and coordination with allies and partners in shaping and implementing U.S. nuclear strategy, particularly in the context of extended deterrence and assurance. Most recently, during the 2022 NPR process, this was a core component of the review. The U.S. engaged with allies to ensure that their views were heard and understood before reaching any conclusions. See https://www.defense.gov/News/News-Stories/Article/Article/2655892/official-says-input-from-allies-on-nuclear-posture-review-to-be-important/ .

119 U.S. Department of Defense, *2022 Nuclear Posture Review*, in *2022 National Defense Strategy of the United States of America* (2022), p. 9.

120 Ibid., p. 20.

Sustained Commitment

Overall, U.S. nuclear extended deterrence policy has presented more continuity than change, demonstrating both consistency and adaptability over the last three presidential administrations. There has not only been a sustained commitment to extended deterrence, but a bipartisan consensus has emerged around the importance of maintaining a credible nuclear deterrent to reassure allies and deter adversaries, with each administration, in part, building upon the previous efforts.[121] While the Obama administration primarily focused on arms reduction and nonproliferation, the Trump administration emphasized tailored assurance against specific threats, and the Biden administration sought to modernize alliances in response to evolving security challenges. Despite these shifts in emphasis, the core commitment to extended deterrence as a pillar of U.S. national security has remained steadfast. Still, despite some progress, deep and growing concerns among allies regarding the United States' future role and commitment to their security have reached a critical point, highlighting an urgent need for sustained and decisive efforts to restore confidence and address mounting anxieties in an increasingly uncertain global landscape.

For the last several decades, the underlying challenges of U.S. extended deterrence have remained the same: how to establish credibility of U.S. nuclear extended deterrence guarantees in face of new threats, while also assuring increasingly anxious allies. This problem set has always been challenging and will likely become more complex, with U.S. credibility remaining on the line.

121 One major expectation to this trend was the SLCM-N, which faced cancellation under the Biden administration, reflecting differing views from the Trump administration on its necessity and role within the United States' broader deterrence strategy.

Chapter 2: Extending Nuclear Deterrence in Europe

The historical context of U.S. practices in extending nuclear deterrence and assuring allies in Europe is deeply intertwined with the evolution of NATO and the geopolitical landscape of the Cold War and beyond. U.S. extended deterrence has been a key component of NATO's collective security since the Alliance's inception. Following World War II, the emergence of the Soviet Union as a superpower and the onset of the Cold War prompted the United States to adopt a strategy of nuclear deterrence to protect its European allies. This strategy was formalized through NATO, established in 1949, which aimed to provide collective defense against potential Soviet aggression. The United States extended its nuclear umbrella over Europe to assure allies that they would not face the threat of Soviet expansion alone. This commitment was crucial in maintaining stability in Europe and deterring Soviet advances during a period marked by high tensions and the threat of nuclear conflict.

The core nuclear history of NATO reflects a series of strategic decisions and policies aimed at reinforcing the credibility of U.S. nuclear deterrence. Early NATO strategies emphasized the importance of nuclear weapons as a counterbalance to perceived Soviet conventional superiority. The deployment of U.S. nuclear weapons in Europe, including the establishment of DCA and missile systems, became a cornerstone of NATO's deterrence posture. The presence of U.S. nuclear forces in Europe was not merely a matter of military strategy; it also served as a political signal to both allies and the Soviet leadership, reinforcing the United States' commitment to European security. Today, over 75 years later, these commitments remain crucial for the Alliance's security, peace, and prosperity.

As an alliance of 32 member states, NATO continues to adapt its nuclear deterrence strategy in response to evolving geopolitical challenges, particularly with the resurgence of Russia as a strategic competitor and the PRC's coercive policies

that challenge the Alliance's values and interests.[122] NATO's nuclear posture remains a cornerstone of collective defense, reinforcing the principle that an attack on one member is an attack on all. This collective assurance is vital for maintaining the credibility of deterrence, as it underscores the United States' commitment to its European allies and the importance of a unified response to potential aggressors. In recent years, NATO has emphasized the need for a modernized nuclear arsenal and enhanced interoperability among member states.[123] This includes the integration of advanced technologies, such as missile defense systems and precision-guided munitions, which complement traditional nuclear capabilities. The Alliance has also focused on strengthening its command-and-control structures to ensure rapid and effective decisionmaking in the event of a crisis.

Moreover, NATO's nuclear policy is articulated through various summit communiqués and strategic documents, including the 2010 Strategic Concept, the 2012 Deterrence and Defense Posture Review (DDPR), and the 2022 Strategic Concept, which highlights the importance of maintaining a credible nuclear deterrent while also addressing the complexities of contemporary security threats. These documents reflect a commitment to a flexible deterrence strategy that can adapt to a range of scenarios, ensuring that NATO remains prepared to respond to potential adversaries.

This chapter provides a historical overview of U.S. practices, software, and hardware for extending deterrence and assuring allies in Europe. The chapter will explore the core nuclear history of NATO, outlining why and how the U.S. extends nuclear deterrence in Europe. It will also detail the changes and continuities in NATO's nuclear policy as reflected in various NATO Summit Communiqués, NATO's Strategic Concepts, and the 2012 DDPR. Lastly, it will summarize the key assumptions related to extended deterrence in the European theater.

122 NATO's 2022 Strategic Concept offers a detailed analysis of how China's actions challenge core NATO values and interests. It also emphasizes China's and Russia's mutually reinforcing attempts to undercut the rules-based international order and warns about the need to "protect against [China's] coercive tactics and efforts to divide the Alliance." See "NATO's 2022 Strategic Concept," NATO (last updated March 3, 2023), p. 5, para. 13-14. https://www.act.nato.int/wp-content/uploads/2023/05/290622-strategic-concept.pdf. Accessed March 4, 2025.

123 As the 2022 Strategic Concept notes, "The Alliance is committed to ensuring greater integration and coherence of capabilities and activities across all domains and the spectrum of conflict, while reaffirming the unique and distinct role of nuclear deterrence." See "NATO 2022 Strategic Concept," NATO (last updated March 3, 2023), p. 8, para. 30.

A Brief Nuclear History of NATO

Following World War II, NATO emerged as the first peacetime political and military alliance the United States formed outside the Western Hemisphere. To aid the post-war recovery of European nations facing economic and security challenges, U.S. Secretary of State George Marshall proposed the Marshall Plan, which provided substantial economic assistance and fostered integration with the United States. However, the Soviet Union's refusal to participate deepened the East-West divide. Between 1947 and 1948, escalating tensions—including a civil war in Greece, unrest in Turkey, and a Soviet-backed coup in Czechoslovakia—heightened security concerns in Western Europe. The death of Czechoslovak Foreign Minister Jan Masaryk in 1948[124] underscored Stalin's intent to dominate Central and Eastern Europe. In response, President Truman pledged U.S. support to nations resisting Soviet subjugation, prompting Western European countries to seek a collective security solution. This led to the signing of the Treaty of Brussels in March 1948 by Great Britain, France, Belgium, the Netherlands, and Luxembourg.[125] While the United States did not join the Brussels Pact, it spearheaded the formation of the new Atlantic alliance in 1949.

Since 1949, the cooperation and interoperability between NATO nations, their sharing of military hardware and expertise, including nuclear-sharing arrangements, and their ironclad commitment to Article V on collective defense, have enabled a collaborative defense of European security and eased the burden on U.S. forces.[126] While the North Atlantic Treaty does not explicitly mention nuclear weapons or any other types of weapons, nor does it address nuclear deterrence, the concept of nuclear deterrence has been a central element of the Alliance's strategic and policy

124 When the United States announced the Marshall Plan, Czechoslovakia expressed interest in participating. However, the Soviets refused to approve this. In February 1948, a communist coup forced President Benes to accept a communist-dominated government, leaving Masaryk as one of the few non-communists remaining. On March 10, 1948, the Czech government reported that Masaryk had committed suicide by jumping from a third-story window at the Foreign Ministry.

125 While the United States did not become a signatory to the Brussels Treaty, it played a significant role in the negotiations. See "North Atlantic Treaty Organization (NATO), 1949," in *Milestones in the History of U.S. Foreign Relations, 1945-1952* (Washington, DC: U.S. Department of State, Office of the Historian, last updated 2016). https://history.state.gov/milestones/1945-1952/nato. Accessed March 17, 2025.

126 A fact publicly acknowledged by the bipartisan Congressional Commission on the Strategic Posture of the United States, *America's Strategic Posture, Final Report* (October 2023), p. 76.

framework since the Treaty's inception. NATO focused on establishing a credible conventional defense in Europe by creating a permanent political and integrated military structure, appointing General Eisenhower as the first Supreme Allied Commander Europe (SACEUR), and adopting a unified strategy. NATO's first Strategic Concept, DC 6/1, known as "The Strategic Concept for the Defense of the North Atlantic Area", was adopted just a few months after the Alliance was established in December 1949[127] and emphasized the importance of U.S. nuclear weapons for the security of all Allies.[128]

In March 1950, Military Committee document 14 (MC 14), codified the NATO Military Committee's agreement on how best to implement DC 6/1.[129] MC 14 called for a conventional defense of Western Europe able to hold any Soviet aggression at bay no further west than a line formed by the Rhine and Ijssel Rivers. In this early era, the nuclear umbrella was a strictly U.S. and UK affair.[130] Under MC 14, conventional forces were to provide a forward "shield" while U.S. and UK strategic nuclear bomber strikes on targets deep in the USSR would hopefully convince the Soviets to pull back.[131] The Strategic Air Command's (SAC) early plans, however, included nuclear "retardation" strikes by bombers deployed in the United Kingdom intended to slow down or stop the westward progression of Soviet forces into Western Europe.[132] Upon assuming command as SACEUR, Eisenhower took it upon

127 "Note by the Secretary to the North Atlantic Defense Committee on the Strategic Concept for the Defence of the North Atlantic Area (DC 6/1)," NATO (December 1, 1949). https://www.nato.int/docu/stratdoc/eng/a491201a.pdf. Accessed November 18, 2024.

128 According to the Strategic Concept, NATO was to "ensure the ability to carry out strategic bombing promptly by all means possible with all types of weapons... This is primarily a U.S. responsibility assisted as practicable by other nations." See Ibid., p. 5, para. 7(a).

129 "Appendix: Strategic Guidance for North Atlantic Regional Planning," in Gregory W. Pedlow, ed., *NATO Strategy Documents 1949-1969,* pp. 91-100. https://www.nato.int/docu/stratdoc/eng/a500328c.pdf#:~:text=(1)%20Hold%20the%20enemy%20as%20far%20to,have%20already%20been%20prepared%20by%20Western%20Union. Accessed 31 March 2025.

130 Robert Bell, "NATO Nuclear Burden-Sharing Post-Crimea: What Constitutes "Free-Riding"?" A Dissertation Submitted to The Faculty of The Fletcher School of Law and Diplomacy, In Candidacy for the Degree of Doctor of Philosophy (June 2021), p. 20. https://sites.tufts.edu/fletcherrussia/files/2022/11/Robert-G.-Bell-PhD.pdf. Accessed March 5, 2025.

131 Diego Ruiz Palmer, "A Strategic Odyssey: Constancy of Purpose and Strategy-Making in NATO, 1949-2019," Rome: NATO Defense College (June 2019), pp. 8, 26. https://www.ndc.nato.int/download/downloads.php?icode=598. Accessed February 25, 2025.

132 Ibid.

himself to assert his role as a "nuclear commander," even though at that time he had no U.S. nuclear weapons under his command.[133]

However, this shifted in July 1953, when the United States committed theater nuclear weapons to NATO as a key part of forward defense,[134] with the first U.S. nuclear weapons arriving in Europe in September 1954. These deployments aligned with the policy priorities outlined in late 1954 by NATO Military Committee document 48 (MC 48), which authorized the use of nuclear weapons in a conflict with the Soviet Union,[135] including in response to a Soviet conventional attack on Western Europe.[136] Nuclear weapons were seen as the only means to defend allied territory against the conventional superiority of Moscow's conventional forces.[137]

The U.S. decision to deploy nuclear weapons in Europe was full of debate. Various political and psychological factors led to internal disagreements on the deployment of U.S. nuclear weapons overseas. At the time, the U.S. Joint Chiefs of Staff deemed it unwise to store atomic weapons in other countries. However, deploying these weapons in Europe was also considered timely and would reassure allied nations that U.S. nuclear forces would be capable of deterring and countering

133 Ibid.

134 This decision was also driven by the Soviet's progress on atomic weapons. On August 12, 1953, the Soviet Union exploded their first thermonuclear bomb, signaling that they were technologically catching up on the United States.

135 However, NATO's endorsement of MC 48 did not mean widespread acceptance of its ideas in Western Europe. According to SACEUR General Alfred Gruenther, it would take time before Europeans saw the bomb as a "conventional means and they [would] stop being afraid of it." See Office of the Assistant Secretary of Defense (International Security Affairs), "State Defense Conference with SACEUR on 'New Approach' Atomic Planning, 6 October 1954," in William Burr, ed., *The U.S. Nuclear Presence in Western Europe, 1954-1962, Part I*, Briefing Book #714, National Security Archive (July 21, 2020). https://nsarchive.gwu.edu/document/20484-national-security-archive-doc-03-office. Accessed October 15, 2024.

136 "A Report by the Military Committee on the Most Effective Pattern of NATO Military Strength for the Next Few Years," *North Atlantic Military Committee Decision on MC 48,* Brussels (November 22, 1954). https://www.nato.int/docu/stratdoc/eng/a541122a.pdf#:~:text=In%20developing%20the%20pattern%20of%20NATO%20military,effectively%20contributing%20to%20success%20in%20the%20initial. Accessed October 15, 2024.

137 Lord Hastings Lionel Ismay, Winston Churchill's chief military assistant during WWII and the first Secretary General of NATO (1952-1957) famously said the purpose of NATO was "to keep the Russians out, the Americans in, and the Germans down." Quoted in "Origins: NATO Leaders: Lord Ismay," NATO, https://www.nato.int/cps/en/natohq/declassified_137930.htm. Accessed December 30, 2024.

any acts of Soviet aggression.[138] Moreover, after assuming the presidency in 1953, Eisenhower drew on his experiences as SACEUR to define his defense policy. By the time Eisenhower entered the Oval Office, it was clear that the United States was facing a long, protracted struggle with the Soviet Union, and that the numerical advantage of the Red Army would be a serious concern. President Eisenhower reasoned[139] the U.S. overwhelming nuclear advantage would offset the Red Army's numerical advantage in conventional forces. Eisenhower's "New Look" defense strategy[140] was based on his conviction that sustaining a large standing army would, in time, cripple America's economy—a policy that eventually did just that to the Soviet economy. Several key elements of his "New Look" policy, particularly the continued emphasis on the NATO Alliance, were rooted in his tenure as NATO Supreme Commander.[141] Eisenhower thought that part of the solution to making NATO stronger was to develop greater cohesion among the NATO allies. He not only worked to strengthen the Alliance but also shifted the strategic focus from naval and ground forces to air power and tactical nuclear weapons to deter Soviet aggression

138 "History of the Custody of the Deployment of Nuclear Weapons: July 1945 through September 1977," prepared by the Office of the Assistant to the Secretary of Defense (Atomic Energy) (February 1978), p. 26. https://nsarchive2.gwu.edu/news/19991020/history-of-custody.pdf. Accessed October 15, 2024.

139 Known as the Solarium Project because it was hatched in the White House's Solarium Room, three advisory panels assessed Truman's national security policy and made recommendations for confronting the threat of Communism. Three esteemed experts, George Kennan, Vice Admiral Richard Conolly, and Major General James McCormack headed the panels. President Eisenhower received the panels' reports on July 16, 1953, and his National Security Council melded the key elements of each panels' plan into a new security strategy. Known internally as NSC 162 and externally as Eisenhower's "New Look," the strategy refocused the U.S. Cold War efforts and recalibrated Truman's defense buildup and containment policy by rejecting undisciplined defense spending as well as dangerous defense cuts.

140 Eisenhower's New Look policy was based on three key principles: the United States would avoid bankrupting itself by limiting military expenditures; it would maintain security by reducing military manpower and relying on the deterrent power of nuclear weapons; and it would aim not only to contain Communism but also to roll it back using a range of tactics, including propaganda and covert action.

141 Eisenhower's experiences at NATO made him keenly aware of how the Cold War dynamics in Europe shaped Allied perceptions of U.S. actions within NATO. He believed that an increased U.S. military presence might encourage Western European nations to scale back their own troop commitments, relying more heavily on American forces. These insights, shaped by his tenure as NATO's SACEUR, played a significant role in shaping Eisenhower's views on the appropriate size of the U.S. military.

against Western Europe.[142] Eisenhower recognized that the Cold War could only be won over time; that it was a struggle of attrition and competitive advantage.

And at the center of that competitive advantage were nuclear weapons and U.S. allies. The introduction of nuclear sharing in 1957 established new dependencies between the United States and certain allies. The Soviet launch of the Sputnik satellite in October 1957 heightened urgency in NATO's discussions on nuclear sharing. The issue of custodial arrangements for nuclear weapons in support of Allied Forces first arose in July 1957, when Secretary of State John Foster Dulles revealed that the United States was "studying" the idea of transferring custody of nuclear stockpiles in Western Europe to NATO.[143] By November 1957, the Joint Chiefs of Staff recommended a formal concept to the Secretary of Defense to further the objectives of Article III of the North Atlantic Treaty. The proposal outlined the following principles:

1. The United States would maintain custody and technical surveillance of nuclear weapons, as required by U.S. law.
2. NATO nations would:
    a) Provide physical facilities for additional storage sites.
    b) Ensure external security of these sites.
    c) Offer support for U.S. custodial personnel, such as housing and administrative facilities.
3. Custodial arrangements would ensure the timely and effective availability of nuclear weapons for NATO defense under Supreme Allied Commander Europe (SACEUR) directives.[144]

After receiving approval from the Secretary of Defense, the Secretary of State, and the Atomic Energy Commission, this concept became the foundation of the NATO nuclear stockpile proposal. The proposal was presented to NATO Heads of Government during the December 1957 meeting in Paris. The NAC agreed to this proposal and issued a communiqué calling for the establishment of "stocks of

142 Other cabinet members also held this view. Secretary Forrestal was convinced after the Berlin crisis of 1948 that nuclear weapons offered the cheapest means of buying security. See "History of the Custody of the Deployment of Nuclear Weapons: July 1945 through September 1977," Prepared by the Office of the Assistant to the Secretary of Defense (Atomic Energy) (February 1978), p. 12.

143 Ibid., p. 77.

144 Ibid., pp. 59.

nuclear warheads which would be readily available for the defense of the Allies in case of need."[145] This became NATO's first formal nuclear arrangement.[146]

The NATO Stockpile Plan, developed in response to this decision, was designed to align with NATO's strategic concept MC 14/2.[147] Under the agreement, it stipulated the United States would deploy nuclear warheads under U.S. custody in accordance with NATO defensive planning and in agreement with the nations directly involved. In the event of hostilities, these warheads would be released to NATO's SACEUR for operational use by nuclear-capable forces.[148]

Under the agreement, the United States would maintain control and custody of the weapons, and while the U.S. president possessed sole authority for their launch, the president could delegate authority to the NATO SACEUR to use the weapons in the case of war.[149] The warheads and their delivery vehicles had to remain separate and unarmed until the United States released the warheads for launch and, once released, the weapons would be under NATO control.[150] Despite U.S. custodianship, security of the nuclear weapons was the responsibility of the allied nation.[151]

145 Ibid.

146 "Final Communiqué Chairman: Mr. P.H. Spaak, Secretary General of NATO December 16–19, 1957," NATO (last updated June 20, 2023). https://www.nato.int/cps/en/natohq/official_texts_17551.htm. Accessed October 7, 2024.

147 Adopted in May 1957, NATO MC-14/2 was the "Overall Strategic Concept for the Defense of the NATO Area," outlining the Alliance's strategy of "massive retaliation" and emphasizing the crucial role of nuclear weapons in deterring potential aggression.

148 "History of the Custody of the Deployment of Nuclear Weapons: July 1945 through September 1977," prepared by the Office of the Assistant to the Secretary of Defense (Atomic Energy) (February 1978), pp. 59, 77.

149 "Representative Chet Holifield, Chairman, Ad Hoc Subcommittee to President Kennedy, 15 February 1961, enclosing Report on Inspection Trip to NATO Countries, Top Secret, Excised copy," in William Burr, ed., *The U.S. Nuclear Presence in Western Europe, 1954–1962, Part II*, Briefing Book #722, National Security Archive (September 16, 2020). https://nsarchive.gwu.edu/document/28543-document-5-representative-chet-holifield-chairman-ad-hoc-subcommittee-president. Accessed October 7, 2024.

150 William Alberque, "The NPT and the Origins of Nato's Nuclear Sharing Arrangements," *Proliferation Papers*, no. 57, *Institut Français des Relations Internationales* (Ifri) (2017), pp. 13-14.

151 "Representative Chet Holifield, Chairman, Ad Hoc Subcommittee to President Kennedy, 15 February 1961, enclosing Report on Inspection Trip to NATO Countries, Top Secret, Excised copy," in William Burr, ed., *The U.S. Nuclear Presence in Western Europe, 1954–1962, Part II*, Briefing Book #722, National Security Archive (September 16, 2020).

According to Frühling and O'Neil, these nuclear-sharing arrangements significantly diminished the independent operational capabilities of European allies, as they became reliant on U.S. nuclear forces.[152] Concurrently, the ability of the United States to adjust its nuclear posture in Europe without undermining NATO's military credibility relied heavily on the active cooperation of European allies. As Frühling and O'Neil write, this "mutual dependence both characterized and reinforced the nuclear relationship between the U.S. and its NATO allies during the Cold War."[153]

Subsequent strategic documents throughout NATO's history have further developed the key elements of the Alliance's nuclear policy, highlighting this "mutual dependence" between the United States and its allies, as well as the associated political tensions. For example, the 1950s marked a significant period in NATO's nuclear strategy, characterized by the doctrine of massive retaliation, which posited that any Soviet aggression would be met with overwhelming nuclear force. This doctrine was articulated in the 1954 NATO Military Committee report, which emphasized the need for a credible nuclear deterrent. However, in the late 1950s, NATO's nuclear strategy of massive retaliation began to lose its credibility as U.S. supremacy eroded with the Soviet buildup of long-range missiles. Because of this growing doubt, beginning in the late Eisenhower presidency, more than a dozen nuclear strategy proposals were floated by various allies. For about eight years, NATO deliberated and eventually arrived at a flexible response strategy.[154] However, tensions among allies increased when U.S. Secretary of State Dulles suggested that nuclear defense in Europe could lessen the need for U.S. strategic nuclear retaliation. This, along with SACEUR Norstad's proposal that nuclear defense might allow for a "pause" before massive retaliation, raised concerns among allies about

152 Frühling and O'Neil also highlight that this interdependence made it impossible for Washington to impose its original vision of "flexible response" the way it had done when allies agreed to the introduction of the nuclear stockpile in 1957. See Stephan Frühling and Andrew O'Neil, *Partners in Deterrence: US Nuclear Weapons and Alliances in Europe and Asia* (Manchester, UK: Manchester University Press, 2022), p. 60.

153 Ibid.

154 During the Berlin Crises from 1958 to 1962, NATO's planning emphasized conventional responses with limited nuclear use, laying the groundwork for the later concept of "flexible response." This approach allowed NATO to respond to a range of threats with a spectrum of military options, including conventional forces, tactical nuclear weapons, and strategic nuclear capabilities. The introduction of dual-capable aircraft, such as the F-4 Phantom and later the F-16, exemplified this shift, enabling NATO to maintain a credible deterrent while providing flexibility in response to varying levels of aggression.

Washington's commitment to its security guarantees.[155] These fears intensified in 1961 as allies became aware of the new Kennedy administration's strategy, which diverged from MC 14/2 by requiring options that balanced local conventional resistance, graduated nuclear responses, and massive strategic retaliation.[156] Amidst these fears and tensions, allies deliberated on the needed arrangements for nuclear-needed forces, and they considered separately the question of how to improve high-level consultations.

During the early Cold War, NATO allies also consistently sought guarantees from the United States that nuclear weapons would not be used without prior consultation. Meanwhile, the United States aimed to maintain its freedom of action and upheld the stance that no U.S. president would permit veto power over U.S. nuclear use.[157] By 1962, the Kennedy administration tried to assure allies that U.S. strategic nuclear forces would target all key elements of Soviet nuclear striking power, "giving equal priority to the installations threatening NATO Europe as to those threatening the United States."[158] Then-Secretary General Dirk Stikker suggested addressing the challenging issue of "associating all members of the Alliance more closely with the political control over the use of nuclear weapons assigned or earmarked to NATO."[159] As a temporary solution, he proposed that

155 David Schwartz, *NATO's Nuclear Dilemmas* (Washington, DC: Brookings Institution, 1983), pp. 51-59.

156 J. Michael Legge, "Theater Nuclear Weapons and the NATO Strategy of Flexible Response" (Santa Monica, CA: RAND Corporation, April 1983), p. 8. https://www.rand.org/content/dam/rand/pubs/reports/2007/R2964.pdf. Accessed February 25, 2025.

157 In 1960, a Joint Congressional Committee on Atomic Energy investigation revealed that control procedures were often theoretical, with some allies capable of independently launching weapons, particularly those on Quick Reaction Alert aircraft. The committee also found that the Joint Chiefs of Staff and Defense Department had bypassed legal channels in nuclear agreements with allies, failing to inform Congress. This led President Kennedy to temporarily suspend nuclear weapon deployments to NATO allies until security measures were strengthened. See "History of the Custody of the Deployment of Nuclear Weapons: July 1945 through September 1977," prepared by the Office of the Assistant to the Secretary of Defense (Atomic Energy) (February 1978), p. 74.

158 Gregory W. Pedlow, "The Evolution of NATO Strategy 1949-1969," in Gregory W. Pedlow, ed., *NATO Strategy Documents 1949-1969,* pp. xxi- xxii, https://www.nato.int/docu/stratdoc/eng/intro.pdf#:~:text=During%20the%20Athens%20meeting%20Secretary.%20General%20Stikker,17%20April%201962]%2C%20which%20focused%20on%20the (accessed March 14, 2025); "Annual Political Appraisal: Special Report by the Secretary General on NATO Defense Policy," NATO Document C-M (62) 48 (April 17, 1962), pp. 3-4, https://nsarchive2.gwu.edu/NSAEBB/NSAEBB159/usukconsult-16a.pdf (accessed March 14, 2025.

159 Ibid., p. 3.

"the Council should seek the formal agreement of the United States that the United States President act for NATO and, in deciding on the use of nuclear weapons in defense of the NATO area, be guided by previously agreed principles or guidelines."[160] This proposal, later known as the Athens Guidelines,[161] asserted that opportunities for consultation would likely be "extremely limited" during a nuclear crisis. However, the United States would work to consult with NATO allies before authorizing a nuclear release "if time permitted."[162] Channels and procedures for consulting with allies were established: any request or proposal to use nuclear weapons would be communicated to the NAC, allowing member countries to share their views. However, "special weight" was given to the perspective of the NATO country most directly involved—specifically, those providing the warheads, delivery systems, or hosting the weapons on their territory.[163]

While this proposal was intended as a temporary solution, doubts and uncertainties continued to linger among NATO allies. At a NATO Defense Ministers' meeting in Paris on May 31, 1965, U.S. Secretary of Defense McNamara tried to address allied concerns about U.S. nuclear weapons policy for the defense of Western Europe, aiming to alleviate their fears by stating:

> Since last December, the stockpile of nuclear weapons in Western Europe has increased about 10%…Furthermore, the United States plans to deploy to Europe approximately 1800 additional nuclear warheads during the next 12 months. Implementation of these plans will increase the NATO nuclear stockpile, over the January 1961 level, by about 100%…I suggest to you, gentlemen, that there is nothing of "denuclearization" or "nuclear disengagement" in those figures…one

160 Ibid., p. 4.

161 Though it was proposed in 1962, the Athens Guidelines was formally codified in 1965. "Meeting of the Special Committee of Defense Ministers, on November 27, 1965," NATO Document PO/65/616, December 10, 1965.

162 North Atlantic Council, "Summary Record of a Meeting of the Council Held in the Zappeion Building in Athens on Saturday 5th May 1962 at 5 p.m.," (May 21, 1962). https://nsarchive2.gwu.edu/NSAEBB/NSAEBB159/usukconsult-16d.pdf. Accessed March 5, 2025.

163 "Authority to Order the Use of Nuclear Weapons (United States, United Kingdom, France, Soviet Union, People's Republic of China), prepared for the Subcommittee on International Security and Scientific Affairs of the Committee on International Relations of the Committee on International Relations (Washington, DC: Congressional Research Service, Library of Congress (December 1, 1975), pp. 7-8. https://ia800102.us.archive.org/18/items/AuthorityToOrderTheUseOfNuclearWEapons/ELS000-058.pdf. Accessed March 5, 2025.

> thing above all else should be understood: The United States is firmly committed to a forward strategy in Europe, and we propose to use whatever means may prove necessary, including nuclear weapons, to maintain those forward positions.[164]

Nevertheless, concerns about loss of political control persisted among European capitals.[165] In response, NATO, along with the Kennedy (and later Johnson) administration, undertook a lengthy and ultimately unsuccessful effort to develop a multilateral nuclear force (MLF). This initiative, though ultimately failed, aimed to reassure anxious allies that the authority to launch nuclear weapons did not rest solely with the U.S. president.[166,167] A simpler solution eventually replaced the MLF proposal: the creation of the Nuclear Planning Group (NPG), which defense ministers took a year to define.[168] Moreover, since none of the MLF concepts for enhanced nuclear sharing among allies gained consensus within NATO, the Alliance's nuclear posture throughout the 1960s and 1970s continued to rely on U.S. nuclear

164 "History of the Custody of the Deployment of Nuclear Weapons: July 1945 through September 1977," prepared by the Office of the Assistant to the Secretary of Defense (Atomic Energy) (February 1978), p. 108.

165 Moreover, the Kennedy administration was highly concerned about the unreliability of the safeguards in preventing an ally from independently launching a NATO nuclear system that was ostensibly controlled by "Dual Key" arrangements.

166 This complex and protracted episode has been extensively analyzed in numerous scholarly studies. See Timothy Andrews Sayle, "A nuclear education: the origins of NATO's Nuclear Planning Group," *Journal of Strategic Studies* 43, no. 6-7 (September 10, 2020), pp. 920-956. DOI: 10.1080/01402390.2020.1818560. Accessed March 4, 2025.

167 As Hal Brands has argued, the MLF was designed to keep West Germany firmly aligned with NATO under U.S. leadership and to prevent the formation of an independent nuclear bloc in Europe outside of NATO. See Hal Brands, "Non-Proliferation and the Dynamics of the Middle Cold War: The Superpowers, the MLF, and the NPT," *Cold War History* 7, no. 3 (2007), pp. 389-423.

168 For an overview of the different nuclear-sharing arrangements that McNamara recommended or proposed for the MLF during this decade, see Robert Bell, "NATO Nuclear Burden-Sharing Post-Crimea: What Constitutes "Free-Riding"?" A Dissertation Submitted to The Faculty of The Fletcher School of Law and Diplomacy, In Candidacy for the Degree of Doctor of Philosophy (June 2021), p. 39.

warheads, with allies providing land or air delivery under a "dual key" control arrangement.[169,170]

NATO's adoption of the DCA concept sought to address fears of strategic de-coupling and the loss of political control over nuclear weapons. European allies were concerned that the United States, as NATO's primary nuclear power, might hesitate to defend Europe if it risked a Soviet attack on American soil. This fear was heightened by the Soviet Union's growing ICBM capabilities, which threatened the U.S. homeland. To ensure credible deterrence and demonstrate a shared commitment, NATO sought a nuclear posture that distributed responsibilities across the Alliance. The DCA concept, which equipped NATO members with aircraft capable of delivering American nuclear weapons, provided a practical solution. It reduced reliance on the United States, strengthened alliance unity, and allowed European allies to take a more active role in nuclear deterrence. This approach reinforced burden-sharing while maintaining political oversight through the NPG, with strict procedures ensuring collective defense.

The NPG was established in December 1966 when the Defense Planning Committee accepted a recommendation from the Special Committee of Defense Ministers, chaired by U.S. Secretary of Defense McNamara, to create a consultative process on nuclear issues within NATO. This led to the formation of two bodies: the Nuclear Defene Affairs Committee (NDAC), open to all NATO members, and the Nuclear Planning Group (NPG), restricted to nations in NATO's integrated military structure for detailed nuclear work. Initially, the NPG had seven members, with the United States, United Kingdom, Italy, and West Germany as permanent members. The other three seats rotated annually among eligible nations. From 1966 to 1973, the NDAC met annually to review NPG proposals, but after 1973, its functions

169 Simon Lunn, "The Modernization of NATO's Long-Range Theater Nuclear Forces," report prepared for the Subcommittee on Europe and the Middle East of the Committee on Foreign Affairs, U.S. House of Representatives, by the Foreign Affairs and National Defense Division (Washington, DC: Congressional Research Service, December 31, 1980).

170 However, the Kennedy administration did implement the development of positive control "Permissive Action Links" (PALs), which was a combination of an electronic code system and physical hardware placed on or within the weapons to prevent their unauthorized use. See "National Security Action Memorandum 160 to the Secretary of State et al., 'Permissive Links for Nuclear Weapons in NATO,' 6 June 1962, with Memorandum from Jerome Wiesner attached, 29 May 1962, Secret, excised copy," in William Burr, ed., *The U.S. Nuclear Presence in Western Europe, 1954–1962, Part II*, Briefing Book #722, National Security Archive (September 16, 2020), https://nsarchive.gwu.edu/document/28565-document-27-national-security-action-memorandum-160-secretary-state-et-al-permissive (accessed March 5, 2025); Philip Nash, *The Other Missiles of October: Eisenhower, Kennedy and the Jupiters, 1957-1963* (Chapel Hill, NC: University of North Carolina Press, 1997), p. 88.

shifted entirely to the NPG, which became NATO's sole body for nuclear affairs. The NPG's rotational membership ended in 1979 to acknowledge the growing importance of NATO's nuclear policy for all member nations.[171]

Today's Consultative Mechanisms: The Software of U.S. Extended Nuclear Deterrence to NATO

Nuclear Planning Group (NPG)

Today, the NPG serves as the senior body on nuclear matters in the Alliance, continually reviewing and adapting the Alliance's nuclear policy based on the changing security environment. Chaired by the NATO Secretary General, the NPG generally meets at the defense minister level at least once a year, and when necessary, at the ambassador (permanent representative) level. While the NAC holds the ultimate authority within NATO,[172] the NPG addresses specific policy issues associated with nuclear forces and broader issues such as nuclear arms control and nuclear proliferation. NPG discussions cover a broad range of nuclear policy matters, including the overall effectiveness of NATO's nuclear deterrent, the safety, security and survivability of nuclear weapons, and communications and information systems. These discussions inform the Supreme Headquarters Allied Powers Europe's (SHAPE) planning, but the NPG itself does not do military planning. Irrespective of whether they have nuclear weapons, all Allies except for France[173] participate in the NPG to facilitate consultation on nuclear doctrine. It provides a forum in which all NPG member countries can participate in the development of the Alliance's nuclear policy and in decisions on NATO's nuclear posture. Therefore, the agreed-upon policies reflect the common position of all participating countries, as decisions within the NPG are made by consensus.[174]

171 "Nuclear Planning Group," NATO (last updated May 22, 2022). https://www.nato.int/cps/en/natohq/topics_50069.htm. Accessed September 16, 2024.

172 The North Atlantic Council meets at the ambassador level on a regular basis to discuss several issues impacting the Alliance. "North Atlantic Council," NATO (last updated March 21, 2024). https://www.nato.int/cps/en/natohq/topics_49763.htm. Accessed September 16, 2024.

173 France's unique position outside the NPG is rooted in history and reflects the central role of the French president in nuclear decisionmaking under all circumstances. Nevertheless, France has been a key participant in NATO's nuclear discussions for decades and will continue to be, as the French deterrent enhances the overall nuclear deterrence of the Alliance.

174 "Nuclear Planning Group," NATO (last updated May 22, 2022). https://www.nato.int/cps/en/natohq/topics_50069.htm. Accessed September 16, 2024.

At NATO Headquarters in Brussels, the work of the NPG is prepared by the NPG Staff Group, a group composed of members of the national delegations of all participating member countries. The Staff Group carries out detailed preparatory work that then goes up to the NPG ministers (permanent representatives/ambassadors) for review. The group is chaired by a NATO international staff member (the director of nuclear policy), who is currently and has been an American for the last several years. It generally meets once a week and sometimes more often, as necessary, and works closely with the NATO High-Level Group.

NATO High-Level Group (HLG)

The High-Level Group (HLG) of senior defense officials was formed in 1977 to examine nuclear modernization and address the challenges posed by new Soviet nuclear systems, specifically the SS-20 ground-launched ballistic missile system.[175,176] Today, the HLG continues to serve as the senior advisory body to the NPG on nuclear policy and planning issues. In 1998-1999, the HLG absorbed the functions of the former Senior Level Weapons Protection Group (SLWPG), which was responsible for overseeing nuclear weapons safety, security, and survivability.

Chaired by the United States, the HLG is comprised of national policymakers and experts from Allied capitals. The HLG meets approximately twice a year, or as necessary, to discuss NATO's nuclear policy, planning, force posture, and matters concerning the safety, security, and effectiveness of NATO's nuclear deterrent.[177] The HLG relies on the work of subordinate bodies, including the HLG Working Group and the technical work of the Joint Theater Surety Management Group (JTSMG),

175 The RSD-10 Pioneer (NATO: SS-20 "Saber") was a Soviet intermediate-range ballistic missile (IRBM) that entered service in 1976. Launched from a mobile transporter erector launcher (TEL), it featured MIRV technology, high mobility, and dispersibility, enabling it to target most of Europe from Soviet territory. At the time, NATO lacked a comparable capability, as U.S. and UK bombers were stationed in Great Britain, not continental Europe, and Jupiter missiles had been removed. This capability gap, exacerbated by the SS-20's deployment, fueled NATO anxieties and led to the 1979 decision to station U.S. Pershing II IRBMs in Europe. See Pavel Podvig, ed., and Frank N. von Hippel, *Russian Strategic Nuclear Forces* (Cambridge, MA: MIT, 2004), p. 224.

176 For additional historical context on the HLG, particularly its connection to the Intermediate-Range Nuclear Forces (INF) dual-track decision of 1979, see Jeffrey A. Larsen, "The Future of U.S. Non-Strategic Nuclear Weapons and Implications for NATO Drifting Toward the Foreseeable Future" (Brussels, Belgium: NATO Public Diplomacy Division, 2006), pp. 23-25. https://www.nato.int/acad/fellow/05-06/larsen.pdf. Accessed November 15, 2024.

177 "Nuclear Planning Group," NATO (last updated May 22, 2022). https://www.nato.int/cps/en/natohq/topics_50069.htm. Accessed September 16, 2024.

to maintain the highest standards in nuclear surety.[178] The HLG Working Group prepares papers for and supports the HLG on nuclear posture and policy.

Since its inception, the HLG has effectively addressed the European desire for increased consultation with Washington, particularly regarding nuclear issues. Its resilience and success over the last several decades are evident in its integration into the permanent NATO decisionmaking structure. Moreover, the HLG serves as a platform for continued American leadership within the Alliance on nuclear matters in two critical ways: first, through the U.S. chairmanship of the committee, and second, by facilitating discussions that are typically first conducted through the interagency process in Washington before being presented to allies in Brussels for their consensus and approval.

Both the HLG and NPG have continued to fulfill their roles after the Cold War, although the frequency of meetings was reduced to once a year in the early 2000s.[179] Every new NATO ally that has joined the Alliance since 1999 has also become a member of both the HLG and NPG. However, it has become evident that the understanding of nuclear deterrence policy and strategy has diminished over time in national capitals, necessitating an increase in the nuclear knowledge of national delegations. As a result, a key focus for the HLG, NPG, and nuclear staff group has been to enhance this knowledge by "raising the nuclear IQ" through staff training, exercises, and other engagements with senior leaders. While progress has been made, more work remains to strengthen national bureaucracies' capacity to address key nuclear deterrence policy issues.[180]

178 Also established in 1977, the JTSMG facilitates participation and consultation among NATO Nuclear Program of Cooperation nations to ensure an effective theater nuclear surety program. It serves as the focal point for resolving technical issues related to nuclear surety and reports to the HLG vice chairman, the U.S. Assistant Secretary of Defense for Nuclear, Chemical, and Biological Defense Programs (ASD(NCB)). Co-chaired by representatives from U.S. European Command (USEUCOM) and Supreme Headquarters Allied Powers Europe (SHAPE), the JTSMG meets quarterly in working group sessions and biannually in plenary sessions. See Office of the Deputy Assistant Secretary of Defense for Nuclear Matters, "Chapter 10 International Nuclear Cooperation," in *Nuclear Matters Handbook 2020, Revised*, p. 3. https://www.acq.osd.mil/ncbdp/nm/NMHB2020rev/docs/NMHB2020rev_Ch10.pdf. Accessed September 16, 2024.

179 Ibid., p. 29.

180 This is in part due to the rotational nature of some of these positions, where civilian and military leaders from allied nations may serve for only a few years.

NATO Forces and Capabilities: The Hardware of U.S. Extended Nuclear Deterrence to NATO

Strategic Nuclear Forces

The strategic nuclear forces of the Alliance, particularly those of the United States, are the "supreme guarantee of the security of the Alliance."[181] While this chapter primarily focuses on U.S. extended nuclear deterrence practices to NATO, it is vital to note that both the French[182] and British[183] independent strategic nuclear forces also contribute significantly to NATO nuclear deterrence.[184] Both

181 "NATO's 2022 Strategic Concept," NATO (last updated March 3, 2023), p. 22, para. 29.

182 "France and NATO," Ministry for Europe and Foreign Affairs (last updated November 22, 2021), https://www.diplomatie.gouv.fr/en/french-foreign-policy/security-disarmament-and-non-proliferation/our-alliances-and-cooperations/France-and-nato/ (accessed September 18, 2024); Emmanuel Macron, "Speech of the President of the Republic of France on the Defense and Deterrence Strategy" (February 7, 2020), https://www.elysee.fr/front/pdf/elysee-module-15162-en.pdf (accessed September 18, 2024); Bruno Tertrais, *French Nuclear Deterrence Policy, Force and Future: A Handbook*, Recheres & Documents N°4/2020 (Paris, France, Foundation pour la Recherche Stratégique, updated February 2020).

183 Since 1962, the United Kingdom has declared its nuclear capability to the defense of the NATO Alliance. The United Kingdom purchases and uses U.S. Trident missiles, equipped with UK warheads, onboard its four Vanguard-class SSBNs, based at HM Naval Base Clyde in Scotland. The Vanguard-class submarines will gradually be replaced with four new Dreadnought-class SSBNs, which will enter into service in the early 2030s. The UK's parallel replacement warhead program depends on the U.S. technology development from the W93/Mk7. Known as the Continuous-At-Sea-Deterrent, the United Kingdom plans to always keep one submarine on patrol, which contributes to NATO's defense and has underwritten the Alliances' collective peace and security for over six decades. See UK Defence Nuclear Organisation and Ministry of Defense, *Integrated Review of Security, Defence, Development and Foreign Policy 2021: Nuclear Deterrent* (April 27, 2021), https://www.gov.uk/guidance/integrated-review-of-security-defence-development-and-foreign-policy-2021-nuclear-deterrent (accessed September 15, 2024); Claire Mills, "Nuclear weapons at a Glance: United Kingdom," Research Briefing (London, UK: House of Commons Library, August 1, 2024), https://researchbriefings.files.parliament.uk/documents/CBP-9077/CBP-9077.pdf (accessed October 11, 2024); Ian Davis, "The British Bomb and NATO: Six Decades of Contributing to NATO's Strategic Nuclear Deterrent" (Stockholm, Sweden: Stockholm International Peace Research Institute, 2015), https://www.sipri.org/sites/default/files/files/misc/NATO-Trident-Report-15_11.pdf (accessed November 15, 2024).

184 Unique among all NATO allies, the United States has also had longstanding formal strategic staff talks with the United Kingdom and France to discuss the threat environment.

countries operate nuclear-armed SLBMs,[185] which provide a survivable retaliatory capability in case of a preemptive first strike. France also has nuclear-armed air-launched cruise missiles (ALCM-Ns).[186] Moreover, while the UK is integrated into NATO nuclear planning processes and commits its nuclear forces to the defense of the Alliance as a whole, France does not participate and has been ambiguous about the possibility of using its nuclear weapons to defend its allies.[187] However, France's position outside the NPG enhances NATO's overall deterrence posture as it complicates Russia's targeting decisions against NATO, as Russia needs to consider France's separate nuclear capabilities and potential responses. Moreover, while the UK assigns its deterrent to NATO and is integrated in NATO's command, it also reserves the right to use the deterrent in "a national capacity," to ensure that British targeting preferences can be implemented. Both second centers of decisionmaking complicate Russian strategic calculations, serving important deterrent purposes.[188]

Since the 1974 NATO summit in Ottawa,[189] the independent strategic nuclear forces of the United Kingdom and France, along with their separate centers of decisionmaking, have been characterized as contributing to deterrence by

185 In addition to the UK's Vanguard-class SSBNs, France's sea component includes four Le Triomphant-class SSBNS based at Ile Longue near Brest and equipped with M-51 SLBMs. Three of these submarines are in the operational cycle, each carrying 16 missiles, and have ensured a continuous at-sea deterrent for over 50 years. See Bruno Tertrais, *French Nuclear Deterrence Policy, Force and Future: A Handbook*, Recheres & Documents N°4/2020 (Paris, France, Foundation pour la Recherche Stratégique, updated February 2020), pp. 55-57.

186 France's air force currently has two Rafale fighter squadrons, capable of carrying the single-warhead nuclear cruise missile, known as ASMP-A (Air-Sol Moyenne Portée-Amélioré, or improved medium-range air to surface missile), giving it a standoff option for air-delivered nuclear weapons. The navy's Rafale-M can operate from aircraft carriers, including the nuclear-powered aircraft carrier *Charles de Gaulle*. This airborne leg serves a strategic role, distinct from NATO's DCA with non-strategic B61s, and is effective for demonstrative measures and nuclear signaling. Both components are regularly assessed through exercises and technical demonstrations. See Ibid., pp. 57-60.

187 "Macron ready to 'open debate' on nuclear European defence," *France 24* (April 27, 2024). https://www.france24.com/en/europe/20240427-macron-ready-to-open-debate-on-nuclear-european-defence. Accessed 10 October 2024.

188 These second centers offer clear deterrence benefits. Russia cannot be certain of successfully executing a decapitating first strike against either European nation, as their separate command structures ensure the other two nations retain the ability to retaliate. Additionally, with France and the United Kingdom possessing nuclear assets in Europe, they could respond if doubts ever arise about the United States' willingness to use its nuclear forces. However, it remains unclear how convincing these arguments are to Russia in practice.

189 "Declaration on Atlantic Relations issued by the North Atlantic Council ("The Ottawa Declaration")," NATO, June 19, 1974 (last updated August 27, 2010). https://www.nato.int/cps/en/natohq/official_texts_26901.htm. Accessed October 9, 2024.

complicating the calculations of potential adversaries.[190] That is, if an adversary decides to attack NATO, it must not only contend with NATO's decisionmakers, but also the decisionmakers of the United States, United Kingdom, and France. Since 1974, every NATO summit has renewed this statement.

The United States' strategic nuclear forces—the triad of bombers that can carry nuclear weapons, nuclear ballistic missile submarines (SSBNs) with submarine-launched ballistic missiles (SLBMs), and land-based intercontinental ballistic missiles (ICBMs)—have long had a role in extended nuclear deterrence, both in NATO declaratory policy and in exercises and deployments. Since the end of the Cold War, the U.S. nuclear capable B-2 and B-52 bombers have flown multiple missions to Europe.[191] Moreover, U.S. submarines are constantly on patrol, including in the Atlantic, and have from time to time pulled into the UK submarine base at Faslane, Scotland.[192] The United States is modernizing all three legs of the Triad. Ongoing nuclear force modernization programs include:

- Ground Leg: The Sentinel ICBM will replace the Minuteman III;
- Sea Leg: The Columbia-Class SSBN will replace the Ohio-Class SSBN and the Trident II D5 Life Extension 2 (D5LE2) will replace the Trident II D5 Life Extension (D5LE);
- Air Leg: The B-21 Raider will replace the B-2A Spirit, the Long-Range Standoff (LRSO) Weapon will replace the AGM-86 air-launch cruise missile (ALCM), and the B-52H Stratofortress will undergo updates to its engines

190 "NATO's 2022 Strategic Concept," NATO (last updated March 3, 2023), p. 22, para. 29.

191 In July 2024, two U.S. Air Force B-52Hs aircraft assigned to the 2nd Bomb Wing, Barksdale Air Force Base, Louisiana, arrived at Mihail Kogalniceanu Air Base, Romania, marking the first time U.S. strategic bomber aircraft have operated out of Romania. See "U.S. bombers arrive in Europe, first time operating out of Romania," NATO Allied Air Command (July 22, 2024), https://ac.nato.int/archive/2024/US_BTF_24-4_arrives_ROU (accessed October 9, 2024); "U.S. bombers deploy to Royal Air Force Fairford for latest European bomber task force," NATO Allied Air Command (May 24, 2024), https://ac.nato.int/archive/2024/BTF_24-3_begins (accessed October 9, 2024).

192 In July 2022, the U.S. Navy Ohio-class ballistic missile submarine USS Rhode Island (SSBN 740) arrived at Her Majesty's Naval Base (HMNB) Clyde, Scotland (Faslane) for a scheduled port visit. Previously, USS Alaska (SSBN 732) conducted a port visit to Faslane in July 2019. See "USS Rhode Island (SSBN 740) arrives in Faslane, Scotland," U.S. Navy, U.S. Naval Forces Europe-Africa/U.S. Sixth Fleet Public Affairs (July 1, 2022). https://www.navy.mil/Press-Office/News-Stories/Article/3082630/uss-rhode-island-ssbn-740-arrives-in-faslane-scotland/. Accessed October 9, 2024.

and communication systems.[193]

Non-Strategic Nuclear Forces

In addition to the strategic triad, the United States maintains DCA forward-deployed in Europe, along with air-delivered nuclear gravity bombs, which are also being modernized: the B61-12 life extension program (LEP) has replaced legacy B61 gravity bombs; F-35A fifth generation DCA will replace the aging U.S. and NATO ally 4th generation fighter aircraft. Today, NATO has a much smaller set of non-strategic nuclear capabilities than it did during the Cold War.[194] During the 1980s, the diversity of forces included four types of air-delivered bombs, depth bombs, intermediate-range missiles (Pershing II and ground-launched cruise missiles), short-range missiles (Pershing 1A, Lance, Honest John), artillery (eight-inch and 155 mm), Nike Hercules air defense missiles, and atomic demolition munitions.[195] Today, there is one type of U.S. weapon—the B61-12 gravity bomb—based in several European NATO countries, for deployment on a limited number of U.S. and allied fighter DCA. These NATO nuclear-sharing arrangements date to the early days of the Alliance and remain the core of the Alliance's deterrence and defense posture today.

Dual-Capable Aircraft (DCA)

Alongside the independent nuclear capabilities of NATO's three nuclear weapon states, an important part of NATO's nuclear deterrence remains its nuclear-sharing

193 The three legs of the U.S. nuclear triad are complementary, with each component offering unique attributes. Maintaining a modern U.S. triad that possesses the attributes of effectiveness, responsiveness, survivability, flexibility, and visibility, ensures that the United States can withstand and respond to any strategic attack; tailor its deterrence strategies as needed; and assure Allies in support of our extended deterrence commitments. See U.S. Department of Defense, "2022 Nuclear Posture Review Factsheet: U.S. Nuclear Capabilities" (October 27, 2022). https://media.defense.gov/2022/Oct/27/2003103940/-1/-1/1/NUCLEAR-CAPABILITIES-NPR-FACTSHEET.PDF. Accessed October 9, 2024.

194 Susan J. Koch, "The Presidential Nuclear Initiatives of 1991-1992," Case Study 5, (Washington, DC: Center for the Study of Weapons of Mass Destruction, National Defense University, September 2012).

195 Catherine Kelleher, "NATO Nuclear Operations," in Ashton B. Carter, John D. Steinbruner, and Charles A Zraket, eds., *Managing Nuclear Operations* (Washington, DC: Brookings Institution Press, 1987), figure 14-1, "NATO Delivery Systems," p. 466.

arrangements through the DCA mission.[196] Under the NATO nuclear-sharing arrangements, several non-U.S. allied air forces are able to deliver U.S. nuclear weapons with DCA[197]—that is, aircraft that are certified for nuclear as well as conventional missions.[198] The DCA mission is shared with specific NATO allies, and

196 The U.S. deployment of nuclear weapons in NATO is regulated under United States law. The United States participates in various programs of cooperation (that is, legal frameworks for international information exchange on nuclear weapons-related issues) with several international partners, including the UK, France, and NATO itself. "Within the United States, the Atomic Energy Act (AEA) governs the exchange of nuclear-related information. Sections 91c, 123, and 144 of the AEA describe the different types of exchanges, in which the United States may legally engage. According to the AEA, all international information exchanges are predicated on the existence of an Agreement for Cooperation, such as a mutual defense agreement (MDA), with the individual nation or organization." See Office of the Deputy Assistant Secretary of Defense for Nuclear Matters, "Chapter 10 International Nuclear Cooperation," in *Nuclear Matters Handbook 2020, Revised*, pp. 1-2.

197 The United States also concludes bilateral Agreements for Cooperation for Mutual Defense Purposes with NATO members participating in NATO nuclear sharing. Agreements with hosting nations have been described as "bilateral arrangements between the United States, providing the warheads, and European Allies, providing the stationing ground and the means of delivery." See Dr. Karl-Heinz Kamp and Major General Robertus C.N. Remkes (U.S.A.F. ret.), "Chapter 4: Options for NATO Nuclear Sharing Arrangements," in Steve Andreasen and Isabelle Williams, eds., *Reducing Nuclear Risks in Europe: A Framework for Action* (Washington, DC: Nuclear Threat Initiative, 2011), p. 87. https://media.nti.org/pdfs/NTI_Framework_full_report.pdf. Accessed October 9, 2024.

198 Note that while a particular aircraft may be the same type or model as some DCA, a particular F-15E, F-16, or F-35 fighter may be conventional only. NATO members may purchase such aircraft for use in a conventional role without participating in nuclear programs of cooperation required for nuclear carriage.

includes the F-15E, F-16,[199] Tornado, and the F-35A.[200] These allies own and operate DCA and host U.S. nuclear weapons on their territories that could be delivered by those aircraft in a time of war in support of NATO's deterrence mission. Because this aircraft would carry U.S. weapons if in a conflict, they need to meet specific U.S. nuclear certification requirements. To be certified as nuclear capable, a unit's personnel undergo an extensive training process. Additionally, the president of the United States stipulates the quantities and locations of forward deployed U.S. nuclear weapons in a classified Nuclear Weapons Deployment Authorization directive. The authority to both deploy and employ these weapons rests solely with the president of the United States. While the United States maintains full custody over the weapons, the DCA allies obtain some degree of control over their hypothetical use. As Mattelaer notes, this is due to the so-called "dual key" nature of these agreements: "In effect, this shared capability can only be employed with the consent of both the United States and the ally concerned."[201]

Nuclear sharing sends a strong signal to potential adversaries of the transatlantic commitment to collective security. These arrangements signal a shared responsibility for nuclear deterrence across the Alliance. The modernization of NATO's DCA capabilities and continued efforts to ensure their credibility and effectiveness also demonstrates unity in light of Russia's aggressive actions. This

199 The U.S. F-16s gave up their nuclear role in 2016-2017. As the 2018 NPR states, "Current U.S. non-strategic nuclear forces consist exclusively of B61 gravity bombs carried by F-15E DCA, supported by responsive air refueling aircraft." Some NATO allies still have dual-capable (nuclear-certified) F-16s pending the deployment of follow-on DCA such as F-35. Of the F-16, the 2018 posture review states, "We are committed to upgrading DCA with the nuclear-capable F-35 aircraft." See U.S. Department of Defense, *2018 Nuclear Posture Review*, pp. 48, 54.

200 NATO allies that are acquiring or planning to acquire F-35 fighter jets include Poland, Romania, Germany, and Denmark. Besides these countries, other NATO nations that have F-35s or are planning to acquire them include Belgium, the Czech Republic, Finland, Greece, Italy, the Netherlands, and Norway. See "Allied Deterrence: F-35s Across Europe, NATO," F-35 Lightning II, Lockheed Martin (July 1, 2024), https://www.f35.com/f35/news-and-features/Allied-Deterrence-F-35s-Across-Europe-NATO.html#:~:text=Allied%20Deterrence:%20F%2D35s%20Across%20Europe%2C%20NATO%20*,Romania%20Singapore%20Switzerland%20United%20Kingdom%20United%20States (accessed March 14, 2025); John R. Hoehn, "F-35 Joint Strike Fighter (JSF) Program," Congressional Research Service (last updated May 2, 2022), https://www.congress.gov/crs_external_products/RL/PDF/RL30563/RL30563.85.pdf (accessed October 12, 2024).

201 Alexander Mattelaer, "11 Nuclear Sharing and NATO as a 'Nuclear Alliance'," in Stephan Frühling and Andrew O'Neil, eds., *Alliances, Nuclear Weapons and Escalation: Managing Deterrence in the 21st Century*, (Canberra, Australia: The Australian National University Press, 2021), pp. 123-131. https://www.egmontinstitute.be/app/uploads/2021/12/ch11.pdf?type=pdf. Accessed October 12, 2024.

further demonstrates to Russia that it cannot achieve its objectives through the limited use of nuclear weapons, as NATO possesses the capability and resolve to impose costs that outweigh any potential gains, ensuring that any nuclear attack by Russia would ultimately fail to achieve its intended goals.

The B61 Nuclear Gravity Bomb

The U.S. B61 bomb is the only nuclear weapon forward-deployed to NATO and can be carried by U.S. and allied DCA, as well as U.S. strategic bombers. This nuclear gravity bomb has been in service for over 50 years, with numerous modifications made since its introduction in 1968 to enhance safety, security, and reliability. The B61 has completed a LEP aimed at refurbishing, reusing, or replacing its nuclear and non-nuclear components.[202] This program extended the bomb's service life by at least 20 years while further improving its safety, security, and effectiveness. The B61-12 variant combines modern accuracy provided by a new U.S. Air Force-supplied Boeing Tailkit Assembly with a significant reduction in yield, without altering military requirements or characteristics. The B61-12 LEP has also consolidated and replaced the four existing B61 weapon designs.[203] The first production unit (FPU) of the B61-12 was completed in FY 2022, with full production concluding in 2025.[204]

Planning, Exercises, and Readiness

NATO demonstrates these capabilities—both software and hardware—through NATO's STEADFAST NOON nuclear exercise, which has taken place annually for more than a decade. Not only does the two-week exercise have an operational purpose,

202 "NNSA completes B61-12 Life Extension Program," U.S. National Nuclear Security Administration (January 7, 2025). https://www.energy.gov/nnsa/articles/nnsa-completes-b61-12-life-extension-program.

203 Today, four variants remain in the stockpile: the 3, 4, 7, and 11. For a photo of a B61 dissembled, see "Figure 2. Components of B-61 nuclear bomb," in Bruce T. Goodwin, *Nuclear Weapons Technology 101 For Policy Wonks* (Livermore, CA: Center for Global Security Research, April 2021), p. 8. https://cgsr.llnl.gov/content/assets/docs/CGSR_NW101_Policy_Wonks_11-04-21_WEB_v5.pdf. Accessed October 9, 2024.

204 According to NNSA, Phase 6.6 Authorization and Full-Scale Production will occur through 2025. The bomb will be approximately twelve feet long and weigh 825 pounds. See "B61-12 Life Extension Program," U.S. Department of Energy, National Nuclear Security Administration (June 2020), https://www.energy.gov/sites/default/files/2020/06/f76/B61-12-20200622.pdf. Accessed October 9, 2024.

but it is seen as an important strategic messaging tool.[205] The 2024 exercise, took place October 14, against a backdrop of heightened nuclear rhetoric from Russian President Vladimir Putin.[206] F-35A fighter jets and B-52 bombers were among some 60 aircraft from 13 nations taking part in the Steadfast Noon exercise.[207] While the exercise does not use any live weapons, some 2,000 military personnel take part in the drills to simulate missions in which warplanes carry U.S. nuclear warheads.

Table 2. U.S. Extended Deterrence Commitments in Europe

Category	Details
Nuclear Capabilities	• NATO Nuclear Sharing: U.S. B61 nuclear bombs deployed in NATO countries • Dual-Capable Aircraft (DCA): NATO allies maintain aircraft capable of delivering U.S. nuclear weapons. • Strategic Nuclear Forces: U.S. triad (ICBMs, SLBMs, bombers) supports NATO deterrence.
Conventional Forces	• Forward-Deployed Forces: Significant U.S. military presence in Europe. • Rotational Deployments: Increased troop rotations and equipment under the European Deterrence Initiative (EDI). • Integrated Air and Missile Defense (IAMD): Aegis Ashore systems in Romania and Poland, plus Aegis-equipped ships in the Mediterranean.
Alliance Framework	• NATO's Article 5 guarantees collective defense. • Deeply institutionalized multilateral defense systems.

205 While NATO declassified the name of the annual STEADFAST NOON nuclear exercise, some argue these efforts have been too limited in scope. See William Alberque and Artur Kacprzyk, "More Pillars Needed: Ten Options for Europe to Improve NATO's Nuclear Deterrence," Stimson Center (October 2, 2024). https://www.stimson.org/2024/more-pillars-needed-nato-nuclear-deterrence/. Accessed December 30, 2024.

206 Dmitry Antonov and Guy Faulconbridge, "Putin to speak on nuclear deterrence as Ukraine tensions rise," Reuters (September 25, 2024). https://www.reuters.com/world/europe/putin-chair-meeting-nuclear-deterrence-kremlin-says-2024-09-25/. Accessed October 10, 2024.

207 "NATO Hold Annual Nuclear Drill Monday Alliance Chief Rutte Says," Reuters (October 10, 2024). https://www.reuters.com/world/europe/nato-hold-annual-nuclear-drill-monday-alliance-chief-rutte-says-2024-10-10/?mkt_tok=ODEzLVhZVS00MjIAAAGWFxj7FJB3Oipmnmfxg8stDBI1-kH5brwqR5bX3xBMHYb9lKAvCVlWiK1zh-fboGOS1jTcEY4bHfuXJAPUCALgFpz2nmXaqj3fYfnDlxqn1QQ. Accessed October 10, 2024.

NATO's Military Committee (MC) and Supreme Headquarters Allied Powers Europe (SHAPE)

Upon signing the Washington Treaty in 1949, the allies established a Military Committee (MC) of their defense chiefs, today referred to as CHODs. The MC is made up of senior military officers (usually three-star Generals or Admirals) from NATO member countries, who serve as their country's Military Representative (MILREP) to NATO, representing their CHOD. The MC is led by the Chair of the Military Committee, NATO's senior military official and spokesperson. The Chair issues guidance to the Director General of the International Military Staff and NATO's Strategic Commanders.[208] The CHODs convene periodically as part of the NATO MC, where they help to shape military policies, strategies, and plans for the Alliance. These meetings also provide a forum for the CHODs to engage with partners from non-NATO countries to discuss security challenges and defense reforms.

In recent years, the MC has placed greater emphasis on enhancing its understanding of nuclear issues, raising what is often referred to as its "nuclear IQ." This effort reflects the growing importance of nuclear deterrence and strategic stability in NATO's defense planning.

SHAPE is responsible for preparing, planning, and conducting military operations to meet the Alliance's political objectives. SHAPE is involved in nuclear deterrence issues through the annual exercise Steadfast Noon,[209] and through the Multinational Chemical, Biological, Radiological and Nuclear (CBRN) Defence Battalion.[210] SHAPE has also undergone significant evolution, particularly in recent years, with its role in planning becoming increasingly critical. SHAPE serves as the strategic-level headquarters for NATO's Allied Command Operations (ACO) and plays a central role in implementing NATO's military strategies, including those related to nuclear deterrence and defense.

208 "Military Committee," NATO (last updated May 21, 2024). https://www.nato.int/cps/sv/natohq/topics_49633.htm, Accessed December 30, 2024.

209 "Nuclear deterrence exercise Steadfast Noon concludes," NATO SHAPE (October 24, 2024). https://shape.nato.int/news-archive/2024/nuclear-deterrence-exercise-steadfast-noon-concludes. Accessed October 30, 2024.

210 "NATO Multinational Chemical, Biological, Radiological and Nuclear Defence Battalion," NATO SHAPE (2023). https://shape.nato.int/about/aco-capabilities2/nato-multinational-chemical--biological--radiological-and-nuclear-defence-battalion. Accessed October 30, 2024.

NATO's Security Environment: Exploring the Causes of U.S. Extended Nuclear Deterrence in Europe

Over the decades, NATO's nuclear policy has undergone both change and continuity, reflecting shifts in the global security environment and the evolving nature of threats. In the early 1990s, the focus was on threat reduction and nonproliferation in the post-Soviet space, with Russia partnering in U.S.-led initiatives like the Cooperative Threat Reduction (CTR) program, fostering optimism about collaboration. This spirit of cooperation was further reflected in agreements like the NATO-Russia Founding Act and discussions about the possibility of Russian NATO membership.[211] This period saw a reduction in the number of nuclear weapons in Europe, as the Intermediate-Range Nuclear Forces (INF) Treaty, led to the elimination of an entire class of nuclear missiles, and the 1991-1992 Presidential Nuclear Initiatives (PNIs) led to significant unilateral reductions of U.S. and Russian non-strategic nuclear weapons.[212] This period also featured debates about Moscow that were dramatically different from discussions we have today. During this time, the task for some U.S. government officials was to assess not if, but *when* Russia would join NATO.[213] Moreover, the 9/11 terrorist attacks shifted attention to terrorism and rogue state weapons of mass destruction (WMD) threats, with Russia remaining an ally in the global fight against terrorism until the 2014 crisis in Ukraine.

This evolving security landscape set the stage for NATO to reassess its strategic priorities. The 2010 NATO Strategic Concept reaffirmed the importance of nuclear

211 For example, the 1991 NATO Strategic Concept marked a significant moment, as it acknowledged the reduced threat from the Soviet Union and emphasized the role of nuclear weapons in a broader security framework that included conventional forces and crisis management capabilities.

212 In a May 22, 2020 interview, Russian Deputy Foreign Minister Ryabkov claimed, "Russia's presidential initiatives have been fulfilled completely." However, according to the U.S. Department of State, Russia's assertions that it is implementing all of its PNI commitments are false. Refer to U.S. Department of State, "New START Treaty Aggregate Numbers of Strategic Offensive Arms," factsheet (September 1, 2022). https://www.state.gov/bureau-of-arms-control-deterrence-and-stability/releases/2022/09/new-start-treaty-aggregate-numbers-of-strategic-offensive-arms. Accessed March 14, 2025.

213 In June 1994, Russia became the first country to join NATO's Partnership for Peace (PfP), a program of practical bilateral cooperation between NATO and partner countries. Jennifer Rankin, "Ex-Nato head says Putin wanted to join alliance early on in his rule," *The Guardian* (November 4, 2021). https://www.theguardian.com/world/2021/nov/04/ex-nato-head-says-putin-wanted-to-join-alliance-early-on-in-his-rule. Accessed December 30, 2024; David E. Sanger, *New Cold Wars: China's Rise, Russia's Invasion, and America's Struggle to Defend the West* (New York, NY: Crown, April 2024), pp. 31-32.

deterrence while also noting that NATO has "dramatically reduced the number of nuclear weapons stationed in Europe and our reliance on nuclear weapons in NATO strategy" with the stated goal to "create the conditions for further reductions in the future."[214] The document recognized that the security environment had changed, with new challenges arising from regional conflicts, terrorism, and the proliferation of WMD. In response, NATO prioritized collective defense, crisis management and cooperative security, including with Russia.[215]

The 2012 DDPR further refined NATO's approach to nuclear deterrence, emphasizing the need for a flexible and tailored deterrence strategy that could adapt to a range of potential scenarios.[216] The 2012 DDPR aimed to address unresolved divisive issues from NATO's 2010 Strategic Concept, including: the role of nuclear weapons in deterrence and defense (such as declaratory policy), NATO's future role in arms control efforts (primarily with Russia), the sustainability of the current nuclear mission and potential alternatives, and the future direction of NATO-Russia relations. This review underscored the importance of maintaining a credible nuclear deterrent while also enhancing conventional capabilities and fostering cooperation among allies. Despite some internal disputes regarding the Alliance's

214 "2010 Strategic Concept 'Active Engagement, Modern Defence,' Adopted by Heads of State and Government
at the NATO Summit in Lisbon, 19-20 November 2010," NATO (last updated February 3, 2012), pp. 14, 24, https://www.nato.int/nato_static_fl2014/assets/pdf/pdf_publications/20120214_strategic-concept-2010-eng.pdf, Accessed March 5, 2025.

215 For example, the concept notes, "NATO-Russia cooperation is of strategic importance as it contributes to creating a common space of peace, stability and security. NATO poses no threat to Russia. On the contrary: we want to see a true strategic partnership between NATO and Russia, and we will act accordingly, with the expectation of reciprocity from Russia." See Ibid., paragraph 33, p. 29.

216 "NATO Deterrence and Defence Posture Review, 20 May 2012," NATO (last updated 28 November 2022). https://www.nato.int/cps/en/natohq/official_texts_87597.htm. Accessed December 30, 2024.

role in nuclear arms control,[217] the DDPR ultimately reaffirmed NATO's commitment to nuclear sharing and extended nuclear deterrence.

The resurgence of Russia as a strategic competitor in the 21st century led to a renewed focus on nuclear deterrence. The Russian invasion of Crimea in 2014 marked the beginning of NATO's shift back to its core mission of collective deterrence and defense. This transformation accelerated dramatically with Russia's full-scale invasion of Ukraine in February 2022, which reintroduced major conventional war to the European continent. Russia's unprovoked invasion of Ukraine, against a backdrop of nuclear threats,[218] was considered a watershed moment for U.S. allies. Russia's aggressive actions, including its nuclear saber-rattling, raised alarms among U.S. allies and partners who see these actions as unacceptable, and that nuclear coercion must be resisted. Russia's irresponsible nuclear threats also called into question Putin's commitment to the principle that "a nuclear war cannot be won and must never be fought."[219]

When launching the 2022 invasion of Ukraine, Putin likely believed that his actions would deter NATO from supporting Ukraine. His continued nuclear intimidation suggests he still hopes to leverage this strategy against the West However, NATO faces limited options in responding to any potential Russian use of nuclear weapons, particularly in scenarios involving limited strikes. Russian strategists view escalation management through the lens of dramatically increasing the level of violence, believing this approach can coerce adversaries into ending the conflict on terms favorable to Russia. According to Koffman et al., this perspective encompasses a full spectrum of options, from non-nuclear to high-end nuclear

217 Notably, at this time, Berlin and Paris were significantly divided on various nuclear issues, particularly regarding nuclear arms control. While the German government was eager to endorse President Obama's vision of a world without nuclear weapons, France remained skeptical of this approach. Despite this dispute, Germany and France worked closely together to reach a compromise on the wording regarding the role of nuclear arms control in NATO—a collaboration that was instrumental in facilitating the path to the 2012 DDPR. See Oliver Meier, "France and Germany Agree on Truce over Nuclear Arms Control Committee as NATO Works on Deterrence and Defense Posture Review," *Arms Control Now* (October 3, 2011). https://www.armscontrol.org/blog/2011-10-03/france-germany-agree-truce-over-nuclear-arms-control-committee-nato-works-deterrence. Accessed December 30, 2024.

218 Anya L. Fink, "Russia's Nuclear Weapons," Congressional Research Services Report (updated January 22, 2025). https://www.congress.gov/crs_external_products/IF/PDF/IF12672/IF12672.8.pdf. Accessed March 14, 2025.

219 "U.S.-Russia Presidential Joint Statement on Strategic Stability," The White House (June 16, 2021). https://bidenwhitehouse.archives.gov/briefing-room/statements-releases/2021/06/16/u-s-russia-presidential-joint-statement-on-strategic-stability/. Accessed March 14, 2025.

responses, not just low-yield options.[220] This strategy is supported by a diverse arsenal of non-strategic nuclear weapons and a doctrine for their use, posing significant challenges for NATO's deterrence strategy moving forward.[221] The recapitalization of Russia's nuclear forces, which includes a range of systems from short-range tactical weapons to ICBMs, has progressed rapidly. According to the U.S. Department of State September 2022 New START declaration, Russia deploys 1,549 strategic warheads on 540 strategic delivery systems (ICBMs, SLBMs, and heavy bombers).[222] The U.S. intelligence community assesses that, as of December 2022, Russia also maintains an arsenal of 1000-2000 non-strategic nuclear warheads not limited by any treaty.[223] Moreover, Russia is developing and deploying new and novel delivery systems, including hypersonic missiles.[224]

While NATO allies recognize that Russia remains the immediate threat, China was officially recognized as an important topic for NATO for the first time at the 2019 London summit, when the Alliance's Heads of State and Government argued that Beijing's "growing influence and international policies present both opportunities and challenges that we need to address together as an Alliance."[225] The 2019 London declaration was followed by "NATO 2030" a consultation process launched by the Secretary General to reflect on the Alliance's future direction,

220 For a comprehensive discussion on this strategy, see Michael Kofman, Anya Fink, and Jeffrey Edmonds, "Russian Strategy for Escalation Management: Evolution of Key Concepts," CNA (April 2020). https://www.cna.org/archive/CNA_Files/pdf/drm-2019-u-022455-1rev.pdf. Accessed November 22, 2024.

221 Given their limited and inferior conventional options, Russia is more likely to resort to nuclear use early in a conventional crisis. They have two key reasons for this: first, they believe a limited nuclear war can be contained and managed; second, they think nuclear coercion could decouple the United States from its allies and compel Washington to back down.

222 U.S. Department of State, "New START Treaty Aggregate Numbers of Strategic Offensive Arms," factsheet (September 1, 2022).

223 U.S. Department of State, *New START Implementation Report* (January 1, 2023). https://www.state.gov/wp-content/uploads/2023/01/2022-New-START-Implementation-Report.pdf. Accessed November 15, 2024.

224 In his 2018 Address to the Federal Assembly, President Putin unveiled Russia's next generation of missile systems and more exotic weapons like nuclear-armed torpedoes. "Presidential Address to the Federal Assembly," Office of the President of Russia (March 1, 2018). http://en.kremlin.ru/events/president/news/56957. Accessed November 14, 2024.

225 "London Declaration, Issued by the Heads of State and Government participating in the meeting of the North Atlantic Council in London 3-4 December 2019," NATO (last updated July 1, 2022). https://www.nato.int/cps/en/natohq/official_texts_171584.htm. Accessed November 22, 2024.

which included an assessment of the "simultaneous geopolitical and ideological challenges posed by Russia and China."[226] Of note, the report linked the need to tackle the China challenge globally and address simultaneous geopolitical and ideological competition to the strengthening of cooperation with key partners in the Indo-Pacific, notably Australia, Japan, New Zealand, and the ROK.[227] While not an official NATO document, the 2030 report is the most far-reaching NATO-adjacent statement on China to date, and it importantly helped pave the way for more substantial discussions on China within the Alliance. These discussions have highlighted the need for the Alliance to devote more resources to address security challenges posed by China, including establishing a consultative body to discuss these collective security interests and monitoring Chinese activities that could affect NATO's military readiness.

Moreover, in the 2021 Brussels Summit Communiqué, NATO leaders devoted two full paragraphs to China, explicitly affirming that "China's stated ambitions and assertive behavior present systemic challenges to the rules-based international order and to areas relevant to Alliance security."[228] They also pointed to a number of concrete problems, such as the expansion of China's nuclear arsenal and its growing military cooperation with Russia, while also reiterating the importance of keeping an open dialogue with China. While NATO has made strides in recognizing this threat, China represents a significant area of disagreement between the United States and European nations. Germany and France, in particular, have resisted stronger NATO language on China, reflecting a more cautious or conciliatory approach. Moreover, from a primarily nuclear perspective, China's emergence as a second nuclear peer raises questions about whether the United States' nuclear arsenal is sufficient to address threats from both Moscow and Beijing. A stronger and more unified transatlantic approach will likely be necessary to address the

226 "NATO 2030: Making A Strong Alliance Even Stronger," NATO (last updated 2022). https://www.nato.int/nato2030/. Accessed November 22, 2024.

227 "NATO 2030: United for a New Era, Analysis and Recommendations of the Reflection Group Appointed by the NATO Secretary General (November 25, 2020), pp. 12, 17-19, 60. https://www.nato.int/nato_static_fl2014/assets/pdf/2020/12/pdf/201201-Reflection-Group-Final-Report-Uni.pdf. Accessed November 22, 2024.

228 "Brussels Summit Communiqué Issued by the Heads of State and Government participating in the meeting of the North Atlantic Council in Brussels 14 June 2021," NATO (last updated July 1, 2022). https://www.nato.int/cps/en/natohq/news_185000.htm. Accessed November 22, 2024.

challenges posed by China's growing global influence, its economic practices, and its strategic ambitions.[229]

Prior to the renewed aggression from Russia, NATO had initiated steps to realign itself towards deterrence and defense, adopting the Concept for the Deterrence and Defense of the Euro-Atlantic Area (DDA) in 2020.[230] This concept was further refined at the 2023 NATO summit in Vilnius, establishing a strategic framework for modernizing NATO's collective defense system. The DDA represents a significant shift away from past crisis management operations, focusing instead on preventing conflict through robust military deterrence.[231] It emphasizes that effective deterrence must begin in peacetime, requiring NATO to contest any adversarial attempts to gain an advantage. It outlines the necessity for cross-domain integration of strategic operations in response to potential attacks, ensuring that NATO's military planning is informed by accurate assessments of Russian capabilities and their future developments.

A critical aspect of this deterrence strategy is the unity of NATO member states. The potential decision by Russia to launch an attack on NATO would depend heavily on Moscow's calculations regarding the Alliance's response. If Putin perceives divisions within NATO, particularly between Eastern European countries and key Western allies like Germany and France, he may be tempted to initiate a probing attack, believing that internal disunity would hinder a unified response. That unity is significantly based on U.S. leadership, and the credibility of U.S. nuclear extended nuclear deterrence commitments and guarantees, which must range across the spectrum of conflict. A clear example of this is NATO's 1979 dual-track decision. Faced with the Soviet Union's deployment of SS-20 intermediate-range

229 For more on this debate, see Richard Weitz, Maximilian Hoell, Komei Isozaki, Youngjun Kim, and Yeseul Woo, *Strengthening International Cooperation in Managing China-Related Proliferation Challenge* (Washington, DC: Hudson Institute, 2023), https://s3.amazonaws.com/media.hudson.org/040623_China_Nuclear_Proliferation_Report_v3.pdf (accessed November 22, 2024); Alexander Mattelaer, "China's Nuclear Shadow Reaches Europe," RUSI (October 8, 2024), https://www.rusi.org/explore-our-research/publications/commentary/chinas-nuclear-shadow-reaches-europe (accessed November 22, 2024).

230 "Deterrence and Defense," NATO (last updated December 13, 2024). https://www.nato.int/cps/fr/natohq/topics_133127.htm?selectedLocale=en#:~:text=The%20DDA%20Concept%20provides%20a,potential%20crisis%20and%20conflict%20scenarios. Accessed March 17, 2025.

231 Stephen R. Covington, "NATO's Concept for Deterrence and Defence of the Euro-Atlantic Area (DDA)," Belfer Center for Science and International Affairs, Harvard Kennedy School (August 2, 2023). https://www.belfercenter.org/publication/natos-concept-deterrence-and-defence-euro-atlantic-area-dda. Accessed November 15, 2024.

missiles, NATO adopted a two-pronged approach: supporting U.S. pursuit of arms control negotiations with the Soviets while simultaneously preparing to deploy U.S. intermediate-range nuclear forces (Pershing II and ground-launched cruise missiles) in Europe if negotiations failed. This decision demonstrated NATO's collective resolve to address a significant security challenge, balancing diplomacy with credible deterrence. It also relied heavily on U.S. leadership to reassure European allies of its extended nuclear deterrence commitments, ensuring unity among NATO members despite internal debates and public opposition. The decision showcased how U.S. leadership could unify allies in a difficult but necessary response to maintain deterrence and stability.

NATO allies have also maintained an incremental approach to the adaptation of NATO's nuclear deterrent. Efforts to gradually strengthen it began after Russia's seizure of Crimea in 2014, marking a shift after more than two decades of relative neglect. From a hardware perspective, the B61-12 nuclear bombs and stealthy F-35A fighters represent an improvement in NATO's capabilities. However, this is not a comprehensive solution. These assets are stationed at a limited number of airbases, which could still be vulnerable to Russian missile strikes. Additionally, there remains a risk that the F-35s could be detected and shot down, particularly if Russian air defenses advance. While some U.S. strategic forces are equipped to carry low-yield warheads, U.S. leadership may be concerned that using them for limited counterattacks could be misinterpreted as part of a broader retaliation, thereby increasing the risk of escalation. This concern is particularly relevant for the W76-2 warheads on certain SLBMs.

Furthermore, in the event of simultaneous conflict or heightened tensions with China, the United States may prioritize its strategic deployments in the Asian theater, especially concerning dual-capable heavy bombers. Because of this, Europe has recently become a secondary priority for the United States, which is certainly impacting NATO's security and deterrence posture. If this scenario continues to materialize under the Trump administration's tenure, it could expose significant gaps in NATO's nuclear deterrence capabilities.[232] The implication is clear: NATO, along with the United Kingdom and France, must make substantial investments now to address and fill that gap. I explore this dynamic further in Chapters 5 and 7.

232 James Cameron, "Eurodeterrent: A Vision for an Anglo-French Nuclear Force," War on the Rocks (March 31, 2025). https://warontherocks.com/2025/03/eurodeterrent-a-vision-for-an-anglo-french-nuclear-force/. Accessed March 31, 2025.

Assumptions Related to U.S. Extended Nuclear Deterrence in Europe

The commitment to nuclear deterrence has been a fundamental aspect of NATO's security architecture, ensuring that allies feel secure in the face of potential threats. As NATO just celebrated its seventieth anniversary, it is an appropriate time to reflect the future of this "long entanglement." At NATO's 50th anniversary, Kaplan argued that "centrifugal forces are arguably greater today than they were during the Cold War" and that "none of the allies seeks to terminate this long entanglement."[233] For allies, this sentiment proves to be true today, especially as two more allies, Finland and Sweden, have recently joined the Alliance following Russia's invasion of Ukraine. However, in 2025, the United States seems to be questioning the sustainability of this long entanglement, raising concerns about its enduring commitment to NATO's nuclear deterrence strategy.

Therefore, it is worth examining the key assumptions underlying U.S. extended nuclear deterrence in Europe, as they have played a crucial role in shaping its strategy and implementation over the last several decades. These assumptions, outlined below, have guided U.S. policy and military planning regarding nuclear deterrence in Europe, influencing decisions about force posture, nuclear-sharing arrangements, and strategic communications with both allies and adversaries. Chapter 4 will discuss if and how some of these assumptions are changing.

Key assumptions regarding U.S. extended nuclear deterrence practices and commitments in Europe include:

1. **Reliance on U.S. Strategic Nuclear Forces and Sharing Arrangements** NATO's nuclear deterrence relies on strategic nuclear forces, especially those of the United States, as the "supreme guarantee" of Alliance security, and nuclear sharing, where allies host U.S. nuclear weapons and operate DCA certified to deliver nuclear weapons in wartime under the command of the U.S. president. Reliance on U.S. strategic nuclear forces remains credible due to the United States' vital interest in Europe's security. This commitment makes its willingness to risk an all-out nuclear war in Europe's defense plausible. It ensures that the U.S. stake in a European conflict is seen as equal to or greater than Russia's, thereby

233 Lawrence S. Kaplan, "The Long Entanglement: NATO's First Fifty Years," *The Journal of Military History* 64, no. 1 (January 2000), pp. 267-268.

strengthening the Alliance's deterrence posture.

2. **Nuclear Weapons as the Ultimate Guarantee of Alliance Security**
   U.S. nuclear weapons in Europe ensure U.S. involvement in any response, reinforcing the transatlantic link. Nuclear sharing strengthens collective defense, signaling that an attack on one is an attack on all. The involvement of multiple allies in nuclear roles fosters unity by sharing the burden of deterrence and reinforcing NATO's principle of collective security. U.S. nuclear weapons in Europe and allied participation in nuclear missions enhance NATO's credibility, demonstrating its capability and resolve to respond to any aggression. This dual approach deters adversaries while strengthening Alliance cohesion.

3. **Political and Operational Importance of Nuclear Sharing**
   From a political standpoint, nuclear sharing is essential to the credibility of NATO's deterrence and defense posture. It demonstrates the alliance's commitment to sharing the nuclear burden, reinforces political unity and the indivisibility of the alliance, and signals the legitimacy of NATO's actions. From an operational perspective, NATO's DCA and B61 nuclear weapons provide flexibility and credibility, allowing for de-escalation or mission adjustment. Nuclear sharing also prevents proliferation by removing allies' need to develop their own arsenals.

4. **Commitment to a Mix of Capabilities**
   NATO has consistently emphasized its enduring commitment to an "appropriate mix" of nuclear and non-nuclear capabilities for deterrence. While extended nuclear deterrence during the Cold War in Europe was primarily focused on nuclear capabilities, today it relies on a broader range of tools. Modern extended nuclear deterrence addresses not only nuclear threats but also conventional military aggression, which has the potential to escalate into nuclear conflict. This comprehensive approach reflects the evolving nature of security challenges and the need for flexibility in deterrence strategies.

5. **Indispensability of U.S. Nuclear Guarantees**
   European allies and partners have no credible alternatives to U.S. extended nuclear deterrence commitments. While France and the

UK possess nuclear capabilities, other NATO allies are unlikely to view these forces as credible substitutes due to their limitations compared to Russia's nuclear arsenal. The UK and French deterrents face significant challenges, including the relatively small size of their arsenals, the near absence of theater nuclear capabilities, the lack of nuclear triads, limited geographic reach, and the absence of a historical record of providing extended nuclear deterrence to allies. These factors highlight the indispensable role of U.S. nuclear guarantees in maintaining NATO's collective security.

As the security landscape continues to evolve, NATO's nuclear policy will likely adapt, reflecting the ongoing challenges and the need for a robust deterrent posture in an increasingly multipolar world. The enduring principles of extended nuclear deterrence remain vital, as they not only provide a security guarantee to European allies but also serve as a critical component of the broader transatlantic relationship, reinforcing the United States' role as a leader in global security.

Chapter 3: Extending Nuclear Deterrence in the Indo-Pacific

U.S. extended nuclear deterrence commitments have proven remarkably durable, not only in Europe but also in Asia, where the United States has extended nuclear deterrence to key U.S. allies in the region for decades. The United States' formal extended nuclear deterrence relationships with the South Korea, Japan, and Australia have been critical to regional security and stability and provide a critical deterrent against North Korean and Chinese threats. These alliances are similar to NATO in that they are based on longstanding treaties and subsequent statements of commitment. However, the alliance structure in the Indo-Pacific differs from that in Europe, as it relies on bilateral relationships and agreements shaped by historical, geopolitical, and strategic factors. While NATO operates through a deeply institutionalized multilateral collective defense system, the Indo-Pacific lacks a comparable regional security organization. Instead, the United States manages its alliances with Japan, South Korea, and Australia bilaterally, continually developing and institutionalizing these partnerships. This is partly because of the diverse security concerns and historical tensions among Asian nations, which make multilateral cooperation more challenging. Instead, the United States has established a "hub-and-spoke" system of bilateral alliances, tailoring its commitments to the specific security needs of each ally. In the context of extended nuclear deterrence, this bilateral approach allows the United States to address unique regional threats, such as North Korea's nuclear ambitions and China's growing military power, without the complexities of a multilateral nuclear-sharing arrangement like NATO's. Furthermore, the absence of indigenous nuclear capabilities among U.S. allies in Asia, combined with their reliance on U.S. security guarantees, reinforces the bilateral nature of these alliances.

The U.S. nuclear posture in the Indo-Pacific also differs from that of Europe. The United States has never established nuclear sharing arrangements with Asian allies, and there are no nuclear-armed allies in the region. Following the end of the Cold War, the United States removed all of its nuclear weapons based in Asia and

instead relied on strategic nuclear capabilities, complemented by the TLAM-N.[234] By 2010, the Tomahawk missiles reached the end of their service lives, prompting the Obama administration to retire the TLAM-N. As Roberts has noted, "the Obama administration carefully considered the views of its allies in Northeast Asia and elsewhere before retiring the nuclear-armed Tomahawk cruise missile."[235] In response, the administration decided to make a fleet of nuclear-capable F-15 and F-16 fighter-bombers armed with nuclear gravity bombs "globally available" in times of crisis to support its extended deterrence commitments to allies.[236] Roberts further explained that from an alliance perspective, "the DCA had benefits for deterrence that the Tomahawk did not" as deployment of DCA signals collective resolve of the United States and its allies.[237] Moreover, according to Roberts, these decisions "reflected a view shared by allies in Northeast Asia and Europe: that the strategic systems of the United States alone are not sufficient for purposes of deterrence and assurance."[238]

The decision to retain non-strategic nuclear capabilities explicitly to support the nuclear umbrella for allies in Europe and Asia was made with a clear understanding that the triad of strategic nuclear forces also plays a central role in reinforcing U.S. commitments to its allies. Since then, the United States has upheld its nuclear umbrella over South Korea, Japan, and Australia, and according to the 2022 NPR, includes the "capability to forward deploy strategic bombers, dual-capable fighter aircraft, and nuclear weapons to the region and globally."[239] The United States relies on its strategic nuclear capabilities, based in the continental United States (CONUS)

234 The U.S. Navy deployed the TLAM-N, in the mid-1980s, placing it on surface ships and submarines. With a range of 2,500 kilometers (about 1,550 miles), these missiles were not subject to U.S.-Soviet arms control limits. In 2010, the Obama administration recommended retiring the TLAM-N, citing redundancy since other weapons could support U.S. allies. The retirement was completed in 2013.

235 Brad Roberts, *The Case for U.S. Nuclear Weapons in the 21st Century* (Stanford, CA: Stanford University Press, 2016), p. 202.

236 The United States has the ability to forward-deploy DCA and nuclear weapons to other regions. See Office of the Deputy Assistant Secretary of Defense for Nuclear Matters, "Chapter 3: Nuclear Delivery Systems," in *Nuclear Matters Handbook 2020, Revised*, p. 8. https://www.acq.osd.mil/ncbdp/nm/NMHB2020rev/docs/NMHB2020rev_Ch3.pdf?zoom_highlight=dca#search=%22dca%22. Accessed September 18, 2024.

237 Brad Roberts, *The Case for U.S. Nuclear Weapons in the 21st Century* (Stanford, CA: Stanford University Press, 2016), p. 202.

238 Ibid.

239 U.S. Department of Defense, *2022 Nuclear Posture Review*, in *2022 National Defense Strategy of the United States of America* (2022), p. 15.

or deployed aboard Ohio-class submarines, to extend nuclear deterrence and provide assurance to its allies in the region. In terms of the "software" of extended nuclear deterrence, mechanisms for consultations on nuclear issues are a more recent development for the United States' Indo-Pacific allies, emerging in the early to mid-2000s, compared to those established within NATO. These consultations also highlight the bilateral nature of U.S. alliances in the region, as well as the need for adaptability.

The histories of Japan, South Korea, and Australia, as well as the threats that concern them, also differs from NATO. As Roberts has explained, "Just as in Europe, U.S. allies in Northeast Asia do not have identical views" of the threat environment.[240] According to Japan's 2022 National Defense Strategy, Japan is worried about being a target of a nuclear strike from Pyongyang in a conflict scenario, and it views China as its primary security threat due to territorial disputes over the Senkaku Islands and China's growing military presence in the East China Sea.[241] In contrast, while South Korea is concerned about a rising China,[242] its primary focus remains on the immediate threat posed by North Korea's nuclear and missile programs.[243] Australia, on the other hand, sees China as a long-term strategic challenge, particularly in the context of Beijing's influence in the Indo-Pacific, and

240 Brad Roberts, *The Case for U.S. Nuclear Weapons in the 21st Century* (Stanford, CA: Stanford University Press, 2016), p. 199.

241 The strategy also notes that "Russia's military activities in the Indo-Pacific region including Japan, together with
its strategic coordination with China, are of strong concern from a defense perspective." See "National Defense Strategy of Japan," provisional translation (December 16, 2022), pp. 3, 6-7. https://www.mod.go.jp/j/policy/agenda/guideline/strategy/pdf/strategy_en.pdf. Accessed October 17, 2024.

242 South Korea views China, as Lee highlights, "as both a potential threat and a neighboring state with which it needs to manage its relationship." See Manseok Lee, "China's Rise and Nuclear Debate in Korea," in Brad Roberts, ed., *Deterring a Nuclear-Armed North Korea,* (Livermore, CA: Center for Global Security Research, May 2023), p. 50.

243 Moreover, the United States and South Korea have begun to perceive the threats posed by China and North Korea differently. This divergence is also well articulated in Sangkyu Lee, Suon Choi, Adam Mount, and Toby Dalton, "Nuclear for Nuclear? Understanding Divergent South Korean and American Perceptions on Deterring North Korea," Carnegie Endowment for International Peace (June 27, 2024). https://carnegieendowment.org/research/2024/06/nuclear-for-nuclear-understanding-divergent-south-korean-and-american-perceptions-on-deterring-north-korea?lang=en. Accessed October 10, 2024.

emphasizes the importance of U.S. engagement in the region to maintain stability.[244] Furthermore, South Korea and Japan have been continuously concerned about American abandonment. According to Roberts, this is not a new phenomenon, as allies in the region have long been concerned about U.S. disengagement from their defense during periods of strategic retrenchment, such as after the Korean and Vietnam Wars.[245]

Table 3. U.S. Extended Deterrence Commitments in Asia

Category	Details
Nuclear Capabilities	• **Nuclear Umbrella:** U.S. strategic nuclear forces (ICBMs, SLBMs, bombers) deter threats from North Korea and China. • **Strategic Bombers:** Regular bomber task force missions (e.g., B-52, B-1, and B-2) to Guam and other locations.
Conventional Forces	• **Forward-Deployed Forces:** • **Japan:** ~50,000 U.S. troops, including 7th Fleet (Yokosuka) and Kadena Air Base (Okinawa). • **South Korea:** ~28,500 U.S. troops, with THAAD and Patriot missile defense systems. • **Rotational Deployments:** Regular joint exercises (e.g., "Ulchi Freedom Shield" with South Korea, "Keen Sword" with Japan). • **Missile Defense:** THAAD in South Korea, Aegis-equipped ships in the Indo-Pacific.
Alliance Framework	• **Bilateral Alliances:** **Japan:** U.S.-Japan Security Treaty (1951, revised 1960). **South Korea:** U.S.-ROK Mutual Defense Treaty (1953). **Australia:** ANZUS Treaty (1951).

Nevertheless, it is clear the Indo-Pacific region has become a breeding ground for highly competitive relations, as the United States, Russia, China, and North Korea

244 A 2023 study found that South Korea views potential North Korean military aggression as its most direct threat, a concern shared by Japan, which could be a target in a conflict. In contrast, Australia, Japan, South Korea, and the UK see broader strategic risks from China's assertive foreign policy, supported by its economic influence and growing nuclear arsenal. South Korea and the UK are particularly concerned about the wider economic, security, and proliferation impacts of a confrontation involving China on regional stability. See Joel Petersson-Ivre, Anna Clara Arndt, Maximilian Hoell, and Alice Saltini, "Strategic Risks in the Asia-Pacific: Examining Australian, British, Japanese, and South Korean Perspectives," Asia-Pacific Leadership Network (June 21, 2023). https://cms.apln.network/wp-content/uploads/2023/06/ELN-APLN-Report-230622B.pdf. Accessed March 14, 2025.

245 Brad Roberts, *The Case for U.S. Nuclear Weapons in the 21st Century* (Stanford, CA: Stanford University Press, 2016), p. 199.

respectively have strategic stakes in the region, if to different degrees. Therefore, this region presents some of the most complex challenges to the concept and practice of U.S. extended nuclear deterrence. With that context, this section will provide a historical overview of U.S. practices, software, and hardware for extending deterrence and assuring allies in Asia, and how these requirements and the U.S. response have changed over time. Lastly, it will summarize the key assumptions related to extended nuclear deterrence in this region.

A Brief Nuclear History of U.S. Alliances and Posture in the Indo-Pacific

As noted, during the Cold War, extended nuclear deterrence was not limited to the protection of European allies. In addition to very large Soviet conventional and nuclear forces in Asia, the nuclear capabilities of China and, later, North Korea raised significant concerns among Indo-Pacific allies, who became increasingly aware of the importance of the U.S. nuclear umbrella for their security. Specifically, China's detonation of a nuclear device in 1964, coupled with perceptions of a declining security environment, heightened anxieties among U.S. allies in the region.[246] However, each ally in the region arrived at these conclusions and security guarantees through different processes.

Japan

Japan emerged as one of the United States' strongest postwar allies and while it has examined developing its own nuclear program in the past, it has consistently concluded that reliance on American extended nuclear deterrence is the best and only guarantee of its security. The 1951 U.S.-Japan Mutual Security Treaty (MST) was a result of the San Francisco Peace Treaty, which required Japan to conclude a bilateral security agreement with the United States.[247] The MST granted the United States unrestricted access to maintaining bases in Japan and effective control over

246 The Vietnam War and Cold War conflicts in Southeast Asia further heightened anxieties about regional instability and communist expansion, reinforcing the importance of U.S. extended deterrence. Additionally, the Soviet Union's increasing naval presence in the Pacific added to security concerns, while advancements in nuclear delivery systems, such as ballistic missiles, amplified the perceived threat.

247 For background on San Francisco System, see John Dower, "The San Francisco System: Past, Present, Future in U.S.-Japan- China Relations," *Japan Focus: The Asia Pacific Journal* 1, iss. 8, no. 2 (February 23, 2014), pp. 1-41. https://apjjf.org/wp-content/uploads/2023/11/article-1024.pdf. Accessed January 5, 2025.

Okinawa[248] "until peace and security were achieved in the Far East."[249] This aligned with Japan's post-war grand strategy, which was known as the so-called "Yoshida Doctrine"[250] and envisioned a pacifist Japan that would host the deployment of U.S. forces on Japanese territory and prohibit any deployment of Japanese forces away from its home islands in return for a U.S. security guarantee.

However, the Japanese government pushed hard to renegotiate the MST to ensure Tokyo had a more equal status, leading to the signing of the 1960 Treaty of Mutual Cooperation and Security, which remains the foundation of U.S. extended nuclear deterrence guarantees to this day. This treaty not only increased the consultative arrangements but also sharpened the U.S. commitment to defend Japan against an external attack.[251] This created the Security Consultative Committee (SCC) which introduced several subcommittees and groups to coordinate the alliance, including the Status of Forces Agreement. During this time, in contrast to NATO and the U.S. alliance with South Korea, U.S. administrations prior to the 1970s were not concerned with burden sharing on the part of Japan.[252] Additionally,

248 The importance of Okinawa for U.S. nuclear strategy was underscored in a 1965 memorandum by the U.S. Joint Chiefs of Staff to U.S. Defense Secretary McNamara, which stated, "[l]ess than full U.S. administrative control of Okinawa would inhibit the flexibility of U.S. military forces based there and might directly affect our nuclear capability in the Far East." See "Memorandum from the joint Chiefs of Staff to Secretary of Defense McNamara, JCSM-900—65, Washington December 23, 1965," in Karen L. Gatz, ed., *Foreign Relations of the United States: 1964-1968,* Vo. 29, Part 2; Japan (Washington, DC: Office of the Historian, Foreign Service Institute, U.S. Department of State, 2006). https://history.state.gov/historicaldocuments/frus1964-68v29p2/d65. Accessed January 5, 2025.

249 The MST was unique in that it effectively granted the United States control over significant parts of a sovereign nation. It allowed for the United States to intervene domestically in Japan and did not require the United States to consult with Japan before even moving U.S. forces in and out of the country. See Sayuri Guthrie-Shimizu, "Japan, The United States, and the Cold War: 1945-1960," in Melvyn Leffler and Odd Arne Westad, eds., *The Cambridge History of the Cold War,* Vol. 1: *Origins* (Cambridge, UK: Cambridge University Press, 2010), p. 253.

250 Named after the country's first post-war Prime Minister, Yoshida Shigeru, the Yoshida Doctrine also ensured that Japan would focus on its economic development, both domestically and globally.

251 Sayuri Guthrie-Shimizu, "Japan, The United States, and the Cold War: 1945-1960," in Melvyn Leffler and Odd Arne Westad, eds., *The Cambridge History of the Cold War,* Vol. 1: *Origins* (Cambridge, UK: Cambridge University Press, 2010), p. 264.

252 According to Johnson, until the mid-1970s, the United States' role was to be more of a benefactor than an alliance partner. According to Johnson, both U.S. Democratic and Republican administrations "indulg[ed] its every economic need." See Chalmers Johnson, *Blowback: The Costs and Consequences of American Empire* (New York, NY: Metropolitan Books, 2000), p. 177.

from a national perspective, Tokyo was less concerned with its own defense policy, as the Japanese government prioritized economic development, relegating security and defense issues to a lower priority. Extended nuclear deterrence did not even become a topic of declaratory policy in Japan until 1967. It was at that point that Prime Minister Eisaku Satō enunciated the four pillars of Japanese policy on nuclear weapons, one of which was relying on the U.S. nuclear deterrent for protection from external nuclear threat.[253] In January 1965, President Lyndon B. Johnson began a tradition of American presidents assuring Japanese prime ministers that "if Japan needs our nuclear deterrent for its defense, the United States would stand by its commitments and provide that defense."[254]

However, in the early 1970s, serious doubts about the credibility of the U.S. nuclear deterrent emerged. Following President Nixon's introduction of his 1969 Guam Doctrine and Washington's pursuit of its opening to China in 1971, Tokyo began to observe the United States reassessing the depth of its commitments in Asia. As Frühling and O'Neil write, "Japanese policymakers were not unique in forming this perspective; South Korean and Australian elites shared the same view."[255] Moreso, as the Vietnam War worsened, the Japanese government became increasingly concerned that the United States' resolve to uphold its extended deterrence commitments to Japan was declining.

Therefore, Japan began to conclude that relying on U.S. extended deterrence as a Japanese defense strategy, as it did in the previous decade, was no longer a viable option. This resulted in several internal studies analyzing Japan's defense options, including nuclear and conventional capabilities. One two-part study yielded a report in 1968 and 1970 titled "A Basic Study of Japan's Nuclear Policy," which examined scenarios for a Japanese nuclear weapons program, but it concluded that it would disrupt the U.S. alliance and create international isolationism, as well as domestic

253 The other pillars included the Three Non-Nuclear Principles (no possession, production, or introduction of nuclear weapons into Japan), the promotion of peaceful nuclear energy use, and support for global nuclear disarmament.

254 "Memorandum of Conversation, Washington, January 12, 1965," in Karen L. Gatz, ed., *Foreign Relations of the United States: 1964-1968,* Vol. 29, Part 2; Japan (Washington, DC: Office of the Historian, Foreign Service Institute, U.S. Department of State, 2006). https://history.state.gov/historicaldocuments/frus1964-68v29p2/d41. Accessed March 14, 2025.

255 Stephan Frühling and Andrew O'Neil, *Partners in Deterrence: US Nuclear Weapons and Alliances in Europe and Asia* (Manchester, UK: Manchester University Press, 2022), p. 99.

upheaval, outweighing any strategic advantages.[256] Then Japan Defense Agency (JDA) Director-General Nakasone also commissioned a group of experts to provide another assessment of Japan's capacity to support a military with nuclear weapons and more robust conventional capabilities.[257] The country's approach to potentially develop its own indigenous capability, widely known as "nuclear hedging," was perfectly described in a 1969 Foreign Ministry policy paper, which stated that "Japan will take a policy not to possess nuclear weapons for a while, but maintain an economic and technical potential for nuclear weapons production."[258] For example, even at the height of its anti-nuclear sentiment in the late 1960s, Tokyo was acutely focused on assessing the costs and benefits of an indigenous weapons program.[259]

When former Foreign Minister Takeo Miki became prime minister in 1974, he convinced the Diet to ratify Japan's acceptance of the NPT as a non-nuclear weapon state. This was in part due to U.S. President Gerald Ford's reaffirmation that the U.S.-Japan security treaty encompassed nuclear threats and the establishment of the

256 Akira Kurosaki, "Nuclear Energy and Nuclear Weapon Potential: A Historical Analysis of Japan in the 1960s," *Nonproliferation Review* 24, no. 1/2 (2017), pp. 52-54. https://doi.org/10.1080/10736700.2017.1367536. Accessed March 14, 2025.

257 This 1970 study group concluded that a nuclear weapon program would take five years and about 40% of the entire FY 1970 defense budget, and that a large-scale conventional build-up was "unrealistic" See Yukinori Komine, "Whither a 'Resurgent Japan': The Nixon Doctrine and Japan's Defense Buildup," *Journal of Cold War Studies* 16, no. 3 (2014), pp. 98-99. DOI:10.1162/jcws_a_00447. Accessed March 14, 2025; Michael J. Green and Katsuhisa Furukawa, "Japan: New Nuclear Realism," in Muthiah Alagappa, ed., *The Long Shadow: Nuclear Weapons and Security in 21st Century Asia* (Stanford, CA: Stanford University Press, 2008), p. 351.

258 Masakatsu Ota, "Conceptual Twist of Japanese Nuclear Policy: Its Ambivalence and Coherence Under the U.S. Nuclear Umbrella," *Journal for Peace and Nuclear Disarmament* 1, no. 1 (2018), p. 204. https://doi.org/10.1080/25751654.2018.1459286. Accessed March 14, 2025.

259 Given the country's massive expansion of its civilian nuclear energy program, Japan had a high degree of credibility when it came to its potential to acquire a threshold nuclear weapons capability. Additionally, their successful space launch program in the 1960s and successful 1970 satellite launch, enabled dozens of successful rocket launches from 1970-1980, which rendered plausible a Japanese long-range missile delivery capability. See John E. Endicott, *Japan's Nuclear option: Political, Technical, and Strategic Factors* (New York, NY: Praeger, 1975).

Subcommittee on U.S.-Japan Defense Cooperation, where the two countries' foreign and defense ministers would thereafter meet to coordinate their common defense.[260]

U.S. nuclear weapons were never deployed to Japan, consistent with Japan's policy to neither possess nor manufacture nuclear weapons, nor permit their introduction into Japanese territory.[261] However, experts have noted there was a political understanding to allow for U.S. naval vessels carrying nuclear weapons into Japanese waters.[262,263] However, the 1991 decision to withdraw nuclear weapons from all U.S. surface ships removed any need for the U.S. and Japanese governments to continue with the political balancing act. According to Frühling and O'Neil, "the fact that U.S. surface ships traversing Japanese waters and docked in ports would no longer by definition be armed with nuclear weapons rendered redundant longstanding public criticism of the alliance."[264]

The Republic of Korea (ROK)

Since the beginning of the Korean War, when the Truman administration considered using nuclear weapons, they have cast a long shadow over the U.S.-

260 "Memorandum of Conversation, Washington, April 11, 1975," in Bradley Lynn Coleman, David Goldman, and David Nickles, eds., *Foreign Relations of the United States, 1969–1976, Volume E–12, Documents on East and Southeast Asia, 1973–1976* (Washington, DC: U.S. Department of State, Office of the Historian, 2010). https://history.state.gov/historicaldocuments/frus1969-76ve12/d203. Accessed March 3, 2025.

261 Japan's strong anti-nuclear sentiment shapes both public opinion and political leadership, prioritizing its non-nuclear policy over obligations under the Japan–U.S. Security Treaty. This stance is embodied in the Three Non-Nuclear Principles, which were introduced by Prime Minister Eisaku Satō in 1967 and formalized by the Diet in 1971. Regarded as sacrosanct, these principles have become "national principles" [*kokuze*], with every administration reaffirming them as a cornerstone of national policy. See Yukio Satoh, "U.S. Extended Deterrence and Japan's Security," Livermore Papers on Global Security No. 2 (Livermore, CA: Center for Global Security Research, October 2017), pp. 39-40, https://cgsr.llnl.gov/sites/cgsr/files/2024-08/satoh-report-final.pdf (accessed October 16, 2024); Brad Roberts, *The Case for U.S. Nuclear Weapons in the 21st Century* (Stanford, CA: Stanford University Press, 2016), p. 197.

262 Kurt Campbell and Tsyoshi Sunohara, "Japan: Thinking the Unthinkable," in Campbell, Robert Einhorn and Mitchell Reiss, eds., *The Nuclear Tipping Point: Why States Reconsider Their Nuclear Choices* (Washington, DC: Brookings Institution, 2004), p. 85.

263 For example, in a 1965 conversation between Satō and McNamara, Satō warned McNamara about the subtle differences between nuclear deployment on Japanese land and stationing nuclear weapons on U.S. naval vessels navigating Japanese territorial or neighboring waters. See Masakatsu Ota, "Conceptual Twist of Japanese Nuclear Policy: Its Ambivalence and Coherence Under the U.S. Nuclear Umbrella," *Journal for Peace and Nuclear Disarmament* 1, no. 1 (2018), p. 201.

264 Stephan Frühling and Andrew O'Neil, *Partners in Deterrence: US Nuclear Weapons and Alliances in Europe and Asia* (Manchester, UK: Manchester University Press, 2022), p. 108.

ROK alliance.[265] Following the Korean armistice in 1953, South Korea also benefited from U.S. extended deterrence guarantees. However, President Nixon's 1970 decision to reduce U.S. forces in South Korea, along with President Carter's 1977 announcement to withdraw U.S. troops over five years, undermined South Korea's confidence in U.S. guarantees. These developments prompted President Park Chung Hee to initiate a covert program to develop an indigenous nuclear capability by 1977,[266] which was ultimately halted largely due to U.S. pressure.[267] However, there was still consternation in Seoul at different times during that period, requiring U.S. officials to privately and publicly reaffirm the U.S. nuclear umbrella. For example, between 1977 and 1980, the frequency of U.S. nuclear-capable submarine port visits to South Korea spiked dramatically, with 14 visits by eight SSBNs in 1979 alone.[268]

South Korea was never included in U.S. nuclear planning on the Korean Peninsula. Instead, as Frühling and O'Neil write, "Until the late 1970s, and even beyond, the U.S.-South Korea relationship was characterized by a transactional nature of interactions, underdeveloped bilateral security institutions, and a marked power asymmetry between Washington and Seoul."[269] It was not until the Bush and Obama administrations, specifically in the context of the growing North Korean nuclear threat, that there has been closer consultations between the two allies.

265 Bruce Cumings, "On the Strategy and Morality of American Nuclear Policy in Korea, 1950 to the Present," *Social Science Japan Journal* 1, no. 1 (1998), pp. 57–70. http://www.jstor.org/stable/30209238. Accessed March 14, 2025.

266 By 1975, the United States concluded that South Korea was attempting to acquire a nuclear capability through the development of a major reprocessing facility with the assistance from Western European and Canadian suppliers. See "State Department Telegraph (195214) To US Embassy South Korea: 'ROK Nuclear Fuel Reprocessing Plans,' 16 August 1975, Secret," in William Burr, ed., *Kissinger State Department Insisted that South Koreans Break Contract with French for Reprocessing Plant,* Briefing Book #668, National Security Archive (April 9, 2019). https://nsarchive.gwu.edu/document/18397-national-security-archive-doc-03-state. Accessed March 14, 2025.

267 "Stopping Korea from Going Nuclear, Part I," in William Burr, ed., *The United States and South Korea's Nuclear Weapons Program, 1974-1976, Part I,* Briefing Book #582, National Security Archive (March 22, 2017). https://nsarchive.gwu.edu/briefing-book/henry-kissinger-nuclear-vault/2017-03-22/stopping-korea-going-nuclear-part-i

268 Hans Kristensen, "When the Boomers Went to South Korea," Federation of American Scientists (blog) (October 4, 2011). https://fas.org/publication/ssbnrok/. Accessed March 2, 2025.

269 Stephan Frühling and Andrew O'Neil, *Partners in Deterrence: US Nuclear Weapons and Alliances in Europe and Asia* (Manchester, UK: Manchester University Press, 2022), p. 126.

Then on September 27, 1991, in a televised address,[270] President George H.W. Bush announced the U.S. decision to "eliminate its entire worldwide inventory of ground-launched, short-range, that is, theater nuclear weapons." He went on, "we will bring home and destroy all of our nuclear artillery shells and short-range ballistic missile warheads."[271] As part of a broad set of unilateral PNIs implemented in parallel with the Soviet Union (later Russia) and in part to "solve a number of tactical nuclear weapons questions at the same time,"[272] the United States withdrew all remaining nuclear artillery and bombs from the region by December 1991.[273] The United States also withdrew all tactical nuclear weapons from its surface ships and attack submarines, as well as nuclear weapons associated with U.S. land-based naval aircraft. This included removing all nuclear Tomahawk cruise missiles from U.S. ships and submarines, as well as nuclear bombs aboard aircraft carriers.[274] The withdrawal of U.S. nuclear weapons from the region brought in a new era for the alliance where South Korean leaders became more focused on the credibility of U.S. assurances.

Moreover, following North Korea's first nuclear test in 2006 and the subsequent evolution of Pyongyang's nuclear weapons program, South Korean anxieties over extended nuclear deterrence increased again. The Bush and Obama administrations agreed to make explicit references to the U.S. nuclear umbrella in the Security

270 "U.S.-Soviet Nuclear Forces Reduction," *C-SPAN* (September 27, 1991). https://www.c-span.org/video/?21616-1/us-soviet-nuclear-forces-reduction. Accessed September 27, 2024.

271 George H. W. Bush, "Address to the Nation on Reducing United States and Soviet Nuclear Weapons" (September 27, 1991). https://www.presidency.ucsb.edu/documents/address-the-nation-reducing-united-states-and-soviet-nuclear-weapons. Accessed September 27, 2024.

272 See Scowcroft quote from 1991 in Susan J. Koch, "The Presidential Nuclear Initiatives of 1991-1992," Case Study 5, (Washington, DC: Center for the Study of Weapons of Mass Destruction, National Defense University, September 2012), pp. 5-6.

273 George H. W. Bush, "Address to the Nation on Reducing United States and Soviet Nuclear Weapons" (September 27, 1991). https://www.presidency.ucsb.edu/documents/address-the-nation-reducing-united-states-and-soviet-nuclear-weapons. Accessed September 27, 2024.

274 Ibid.

Consultative Meeting[275] joint communiqués, and Seoul became very interested in the United States rotating nuclear-capable strategic assets through the peninsula during the periodic North Korean nuclear and missile tests, and high-level conventional military provocations. Between 2013 and 2016, high-profile overflights of U.S. B-52s and B-2s were a prominent feature of the alliance in response to North Korea's nuclear tests.[276]

Australia

The formal U.S.-Australia security alliance dates back to the early 1950s.[277] In the wake of World War II and facing the rise of communism in China and Korea, Australia and New Zealand became concerned about the political situation in the Pacific region. The Australian government was worried that with America, Britain and a number of other European countries forming NATO in 1949, Australia's main allies would focus on European interests to the detriment of the security of the Pacific. Both Australia and New Zealand felt that to achieve ongoing security and peace in the region, they needed to partner with the United States. The negotiation of the Australia, New Zealand, United States Treaty (ANZUS) marked Australia's first political alliance without Britain's involvement, causing tension with the Commonwealth. Britain, believing it should be included as the head of the Commonwealth, campaigned to become a joint signatory, but the United States, Australia, and New Zealand remained firm on the issue. Signed in San Francisco on September 1, 1951, the ANZUS Treaty was concluded in the context of Australia's early commitment of forces to the Korean War, as well as the United States' desire

275 The Security Consultative Meeting (SCM) was established in 1971 as a mechanism to coordinate the political aspects of U.S.-ROK alliance management. As Fruhling and O'Neil observe, the SCM appeared to serve as a quid pro quo by the Nixon administration to reassure Seoul following Washington's 1970 unilateral announcement of a 20,000-troop drawdown on the peninsula. See Stephan Frühling and Andrew O'Neil, *Partners in Deterrence: US Nuclear Weapons and Alliances in Europe and Asia* (Manchester, UK: Manchester University Press, 2022), p. 128; Victor Cha, *Alignment Despite Antagonism: The US-Korea-Japan Security Triangle* (Stanford, CA: Stanford University Press, 1999), pp. 110-115.

276 "North Korea Warned: U.S. Flies Stealth Bombers over Peninsula in Show of Force," *The Wall Street Journal* (March 29, 2013). https://www.wsj.com/articles/SB10001424127887333618045783883205117360 (accessed March 14, 2025); "In Show of Alliance, American Forces Fly B-52 Bomber Over South Korea," *The New York Times* (January 11, 2016), https://www.nytimes.com/2016/01/11/world/asia/south-korea-us-flies-b-52-bomber.html (accessed March 14, 2025).

277 The value of Australia as an ally in the Pacific region cannot be overstated as Australia has fought alongside the United States in all the wars since World War I, beginning with the Battle of Hamel in 1918.

to enter a peace treaty with Japan.[278] The treaty came into force the following year, with the intention of lasting indefinitely.[279]

The United States has never deployed nuclear weapons on Australia's territory, despite a brief period in the late 1950s when Australia sought such a deployment from the United States.[280] Because Australia is geographically isolated from its allies, Australia tried to gain insight into U.S. strategic plans. As early as 1952, Australia unsuccessfully sought to be a part of NATO planning.[281] During the Cold War, Australia was embedded operationally into the U.S. global nuclear command and control network, hosting key U.S. installations, which further strengthened the U.S.-Australian alliance.

Following the end of the Cold War, growing uncertainty about the future of U.S. commitments prompted policymakers in Canberra to emphasize explicit and public references to U.S. extended nuclear deterrence guarantees. Since the early 1990s,[282] Australia has publicly stated its reliance on the U.S. nuclear umbrella,

278 Kent Calder, "Securing Security Through Prosperity: The San Francisco System in Comparative Perspective," *Pacific Review* 17, no. 1 (2004), p. 149, DOI:10.1080/09512740420 00182447. Accessed September 18, 2024.

279 In 1984, New Zealand's newly elected Lange Labour government pledged a "nuclear free" national posture. Under this policy, U.S. vessels were denied access to New Zealand ports unless first declaring if they carried nuclear weapons. However, this requirement clashed with U.S. security policy, which dictates that the presence of nuclear weapons on any vessel should neither be confirmed nor denied. The unwillingness of both nations to compromise on their respective policies led the Reagan administration to declare in 1985 that New Zealand had not fulfilled its alliance obligations, resulting in the suspension of U.S. security guarantees to the country. Although the United States and New Zealand have since repaired their diplomatic relations, extended nuclear deterrence has never been reinstated. "Defining Moments: ANZUS Treaty," National Museum of Australia. https://www.nma.gov.au/defining-moments/resources/anzus-treaty, Accessed September 18, 2024.

280 In the 1950s, the Australian government approached both Washington and London to explore potential arrangements for the future transfer of tactical nuclear weapons to Australia for use in wartime contingencies. These discussions were informal and conducted at the military level, with no concrete plans ever finalized. See Jim Walsh, "Surprise Down Under: The Secret History of Australia's Nuclear Ambitions," *Nonproliferation Review* 5, no. 1 (1997), pp. 3-7. https://www.nonproliferation.org/wp-content/uploads/npr/walsh51.pdf. Accessed April 2, 2025.

281 Henry W. Brands, Jr. "From ANZUS to SEATO: United States Strategic Policy Towards Australia and New Zealand, 1952-1954," *International History Review* 9, no 2 (May 1987), pp. 250-270. https://www.jstor.org/stable/40107239. Accessed October 2, 2024.

282 "Defending Australia, Defence White Paper, 1994," p. 97, https://www.defence.gov.au/sites/default/files/2021-08/wpaper1994.pdf (accessed September 18, 2024); "Australia's Strategic Policy," Department of Defence (1997), p. 26, https://nla.gov.au/nla.obj-1194416626/view (accessed September 18, 2024).

linking it directly to the ANZUS Treaty.[283] Though nuclear weapons are not explicitly mentioned in the ANZUS Treaty, nor are any obligations for specific defense contributions outlined, evidence suggests that Australia and the United States interpret Article II as asserting Australia remains under the U.S. nuclear umbrella.[284] Australia's 2009 Defence White Paper further states that the alliance "means that, for so long as nuclear weapons exist, we are able to rely on the nuclear forces of the United States to deter nuclear attack on Australia."[285] The 2016 Defence White Paper also articulates that:

> Australia's security is underpinned by the ANZUS Treaty, United States extended deterrence and access to advanced United States technology and information. Only the nuclear and conventional military capabilities of the United States can offer effective deterrence against the possibility of nuclear threats against Australia.[286]

Today's Consultation Mechanisms: The Software of U.S. Extended Nuclear Deterrence in the Asia-Pacific

Although the U.S. alliances with Japan, South Korea, and Australia go back many decades, official dialogues on extended nuclear deterrence began in 2010 with South Korea and Japan, and more recently with Australia in 2019. The Obama administration recognized the need for regular extended deterrence dialogues with

283 For a legal debate on the topic, see Anna Hood and Monique Cormier, "The Role of ANZUS in Australia's Reliance on US Extended Nuclear Deterrence," Australian Institute of International Affairs (September 16, 2021). https://www.internationalaffairs.org.au/australianoutlook/the-role-of-anzus-in-australias-reliance-on-us-extended-nuclear-deterrence/. Accessed September 18, 2024.

284 International law allows treaty interpretations to evolve over time based on consistent state practices. Article II of ANZUS provides: "In order more effectively to achieve the objective of this Treaty the Parties separately and jointly by means of continuous and effective self-help and mutual aid will maintain and develop their individual and collective capacity to resist armed attack." See "Security Treaty between the United States, Australia, and New Zealand (ANZUS), 3 U.S.T 3423-3425, Art. 2, (September 1, 1951). https://avalon.law.yale.edu/20th_century/usmu002.asp, Accessed October 2, 2024.

285 Australian Government, Department of Defence, *Defending Australia in the Asia Pacific Century: Force 2030, Defence White Paper* (2009), p. 50. https://www.defence.gov.au/sites/default/files/2021-08/defence_white_paper_2009.pdf. Accessed September 18, 2024.

286 Australian Government, Department of Defence, *2016 Defence White Paper* (2016), p. 121. https://www.defence.gov.au/sites/default/files/2021-08/2016-Defence-White-Paper.pdf. Accessed September 18, 2024.

Japan and South Korea. According to Roberts, "on conclusion of the NPR in 2010, the United States, Japan, and South Korea were all interested in sustaining the high-level substantive dialogues that had been built during the NPR."[287] While the United States has long engaged in formal nuclear policy discussions with its European allies through NATO, no such process existed in Northeast Asia. Instead, according to Santoro and Warden, consultations had been ad hoc, and allies were mostly on the receiving end of U.S. decisions.[288]

To address this gap, the Obama administration established the U.S.–Japan Extended Deterrence Dialogue (EDD) and co-founded the U.S.–South Korea Extended Deterrence Policy Committee (EDPC) in 2010. These forums institutionalized high-level discussions aimed at strengthening deterrence in Northeast Asia, building on years of unofficial expert exchanges. Moreover, in 2019, the United States and Australia developed the Strategic Policy Dialogue (SPD) to discuss cooperation on deterrence, including on extended deterrence. According to Roberts, these mechanisms have served several purposes, as they have institutionalized a sustained leadership focus on these issues, enabled active policy discussions and development, and ensured sustained progress on practical agendas in support of strengthening regional deterrence architectures.[289] Through regular bilateral meetings, site visits, and tabletop exercises, these dialogues have helped the United States and its allies to develop a shared perspective on deterrence principles and broader threats within the region.

Assuring Japan: the U.S.-Japan Extended Deterrence Dialogue (EDD)

Following discussions between United States and Japan regarding the 2010 NPR, the United States and Japan formally established the EDD "as an enduring venue to discuss ways to sustain and strengthen extended deterrence."[290] One of the first high-ranking Japanese officials to speak publicly about the need for more in-depth bilateral discussions on nuclear deterrence issues was Ambassador Yukio Satoh,

287 Brad Roberts, *The Case for U.S. Nuclear Weapons in the 21st Century* (Stanford, CA: Stanford University Press, 2016), p. 202.

288 David Santoro and John K. Warden, "Assuring Japan and South Korea in the Second Nuclear Age," *The Washington Quarterl,* 38, no. 1 (Spring 2015), p. 151.

289 Brad Roberts, *The Case for U.S. Nuclear Weapons in the 21st Century* (Stanford, CA: Stanford University Press, 2016), pp. 202-203.

290 U.S. Department of State, "U.S.-Japan Extended Deterrence Dialogue," Office of the Spokesperson, media note (June 17, 2024). https://2021-2025.state.gov/u-s-japan-extended-deterrence-dialogue-3/. Accessed March 17, 2025.

in an article published in February 2009. As he stated, "A unique feature of the Japan-U.S. security arrangements is that there have been no consultations on how American extended deterrence should function, nor even any mechanism put in place for such consultations. This has been largely due to Japan's reluctance to date to be involved in American nuclear strategy."[291,292]

One notable feature of the U.S.-Japan alliance is the tricky contradictions that the Japanese government has had to manage. On one hand, anti-nuclear sentiments permeate Japanese society;[293] on the other hand, the role of nuclear weapons within the alliance has grown significantly over time.[294] Nuclear weapons have been seen by both Washington and Tokyo as an integral part of their alliance. According to Schoff, the predominant view in Japan has been "continued reliance on the U.S. nuclear deterrent as an indispensable component of Japanese defense policy."[295] Japan has affirmed this approach in its most authoritative documents on defense policy, and the United States has reaffirmed that the full range of U.S. military capabilities—both nuclear and non-nuclear strike forces and defensive capabilities—

291 Yukio Satoh, "Reinforcing American Extended Deterrence for Japan: An Essential Step for Nuclear Disarmament," *AJISS-Commentary 57* (February 3, 2009). https://www.jiia.or.jp/en/ajiss_commentary/column-66.html, Accessed October 16, 2024.

292 As Brad Roberts writes, "In Japan, a forceful advocate for such a bilateral U.S.-Japan process has been Yukio Satoh, arguing in 2009 as follows: 'If the credibility of the U.S. commitment is the question at issue, it is Japanese perceptions that matter. The U.S. commitment to provide extended deterrence to Japan has been repeatedly affirmed by presidents, including President Obama, and other senior officials in agreed documents. Nevertheless, Japanese misgivings and doubts about American commitment persist… it is important for Tokyo to be officially engaged in consultations with Washington on deterrence strategy, including nuclear deterrence. Without such consultations, the Japanese government, let alone the public, will have to be speculative about the credibility of U.S. commitment. That U.S. strategic thinking is undergoing epoch-making changes makes such consultations more important.'" Refer to Brad Roberts, "Extended Deterrence and Strategic Stability in Northeast Asia," National Institute of Defense Studies in Tokyo (NIDS) (2013), p. 14. https://www.nids.mod.go.jp/english/publication/visiting/pdf/01.pdf. Accessed March 4, 2025.

293 Strong anti-nuclear weapons sentiments have only grown stronger in Japan since the Fukushima nuclear power plant accident of 2011.

294 It has been a notable balancing act. For example, the first ever National Security Strategy of Japan, which was adopted by the conservative government of Prime Minister Shinzo Abe in 2013, confirmed Japan's commitment to its non-nuclear policy. With an acknowledgement that U.S. extended deterrence "with nuclear deterrence at its core" is indispensable vis-à-vis nuclear threats, Japan's National Security Strategy aimed to promote cooperation with the United States to maintain and enhance the credibility of U.S. extended deterrence.

295 James Schoff, *Realigning Priorities: The U.S.-Japan Alliance & the Future of Extended Deterrence* (Washington, DC: Institute for Foreign Policy Analysis, 2009), p. 32.

form the core of extended deterrence and support U.S. commitments to the defense of Japan.

The EDD acts to strengthen extended deterrence, as outlined by the previous three U.S. administrations. Through the EDD, Japan and the United States engage in comprehensive discussions on extended deterrence, enhancing bilateral dialogues, and improving cooperation. They share assessments of the regional security environment, review alliance conventional and U.S. nuclear capabilities, and emphasize optimizing the alliance's force posture to strengthen deterrence. Additionally, in this forum, they address strategic arms control and risk reduction in response to the growing complexity of nuclear risks due to the diversification and expansion of regional nuclear arsenals.

The Japanese delegation to the EDD is co-chaired by officials at the deputy director general level from the Ministries of Foreign Affairs and Defense. The U.S. delegation is co-chaired at the deputy assistant secretary level from the Departments of State and Defense.

Since the forum's inception, both Japan and the United States have repeatedly agreed that it is necessary to continue to strengthen deterrence and response capabilities of the U.S.-Japan alliance, amidst an increasingly challenging regional security environment that is illustrated by repeated launches of ballistic missiles by the DPRK and the enhanced military cooperation between Russia and the PRC, as well as cooperation between Russia and the DPRK.[296] Also since its inception, a hallmark of the EDD has been its "hardware" tours for Japanese officials to see the U.S. nuclear weapons infrastructure end enterprise.[297] The alliance has regularly used the EDD forum to conduct site visits,[298] as well as tabletop exercises to increase

296 U.S. Department of State, "U.S.-Japan Extended Deterrence Dialogue," Media Note, Office of the Spokesperson (December 7, 2023). https://2021-2025.state.gov/u-s-japan-extended-deterrence-dialogue-2/. Accessed March 13, 2025.

297 Over the years, this has included visits to ICBM command posts, boarding Ohio-class SSBNs, and visiting the U.S. NNSA national laboratories. Refer to Terrance Roehrig, *Japan, South Korea, and the United States Nuclear Umbrella: Deterrence After the Cold War* (New York: Columbia University Press, 2017), p. 109.

298 In June 2024, the delegations visited F.E. Warren AFB, where they received an ICBM wing mission brief before touring the missile procedures trainer. See "90 MW hosts U.S. Extended Deterrence Dialogue," F.E. Warren Air Force Base, 90th Missile Wing Public Affairs (June 26, 2024). https://www.warren.af.mil/News/Article/3818032/90-mw-hosts-us-extended-deterrence-dialogue/. Accessed October 17, 2024.

mutual understanding of potential courses of action to enhance deterrence and cooperation in a specific crisis scenario.[299]

However, the world has changed dramatically since the EDD's inception. Over the past decade, the EDD topics have also dramatically shifted, especially with Japan's recent security assessments from their 2022 security strategy documents, as well as their involvement in the last several NATO summits since 2022.[300] From the Japanese security perspective, U.S. extended deterrence plays a vital role not just vis-à-vis North Korea and China but also in relations with Russia. Moreover, Japan's new security strategy: The new National Security Strategy (NSS),[301] together with the National Defense Strategy (NDS)[302] and the Defense Buildup Program (DBP),[303] all released in December 2022, entail several unprecedented and highly ambitious projects relevant to Japan's own defense capabilities. As these documents point out, Japan should urgently revamp its military force in light of today's acute security environment, particularly due to the Russian invasion of Ukraine, tension over the Taiwan Strait, and the nuclear and missile ambitions of a more provocative North Korea.[304] Moreover, according to Admiral Tomohisa Takei (ret.), former Chief of Staff, Japanese strategists are now discussing the benefits and costs of Japan having

299 U.S. Department of State, "U.S.-Japan Extended Deterrence Dialogue," Media Note, Office of the Spokesperson (June 17, 2024). https://2021-2025.state.gov/u-s-japan-extended-deterrence-dialogue-3/. Accessed March 13, 2025.

300 "Relations with Japan," NATO (October 25, 2024), https://www.nato.int/cps/en/natohq/topics_50336.htm (accessed November 22, 2024); "Prime Minister Kishida Attends the NATO Summit," Ministry of Foreign Affairs Japan (July 11, 2024), https://www.mofa.go.jp/erp/ep/pageite_000001_00446.html (accessed November 22, 2024).

301 "National Security Strategy of Japan," provisional translation (December 2022). https://www.cas.go.jp/jp/siryou/221216anzenhoshou/nss-e.pdf. Accessed October 17, 2024.

302 "National Defense Strategy of Japan," provisional translation (December 16, 2022). https://www.mod.go.jp/j/policy/agenda/guideline/strategy/pdf/strategy_en.pdf. Accessed October 17, 2024.

303 "Defense Buildup Program of Japan," provisional translation as of March 14, 2024 (December 16, 2022). https://www.mod.go.jp/j/policy/agenda/guideline/plan/pdf/program_en.pdf. Accessed October 17, 2024.

304 The goals stated in Japan's 2022 National Defense Strategy are: 1) to strengthen Japan's own architecture for national defense; 2) to further reinforce joint deterrence and response capability of the Japan-U.S. alliance, and 3) to reinforce collaboration with like-minded countries. See Tokuchi Hideshi, "Japan's New National Security Strategy and Contribution to a Networked Regional Security Architecture," Center for International and Strategic Studies (June 23, 2023). https://www.csis.org/analysis/japans-new-national-security-strategy-and-contribution-networked-regional-security. Accessed October 17, 2024.

NATO-like nuclear sharing arrangements[305] with the United States.[306]

Assuring South Korea: the U.S.-ROK Alliance

South Korea has historically depended on the United States to mitigate the threat posed by North Korea's nuclear capabilities. Pyongyang started making sporadic progress toward developing nuclear weapons during the Cold War, conducted its first nuclear test in 2006, and now frequently issues nuclear threats towards South Korea. In response to some of these developments, the formal deterrence discussions with South Korea began in 2010 in the EDPC. The EDPC consultative mechanism was also an effort to address ROK security concerns and make the U.S. pledge of extended nuclear deterrence "more concrete."[307] According to Roberts, the EDPC "produced a tailored deterrence strategy that helps the two countries to 'work together more seamlessly to maximize the effects of our deterrence.'"[308] The EDPC not only involved annual high-level consultations on the strategic and operational attributes of the alliance, but also involved periodic visits to USSTRATCOM, U.S. nuclear weapons facilities, and other elements of the United States nuclear infrastructure.[309] Since 2011, the EDPC has met as part of the Korea-United States Integrated Defense Dialogue (KIDD), which is a comprehensive defense meeting that integrates a set of consultative mechanisms among the allies.

305 For a report on what this could entail, see Brad Roberts, "Living with a Nuclear-Arming North Korea: Deterrence Decisions in a Deteriorating Threat Environment," *38 North* (November 2020). https://www.stimson.org/wp-content/uploads/2020/11/38-North-SR-2011-Brad-Roberts-Nuclear-North-Korea-Deterrence.pdf. Accessed February 15, 2025.

306 Refer to Admiral Takei's (ret.) remarks at "CSIS-Sasakawa Peace Foundation Conference on Extended Deterrence in Asia," Center for International and Strategic Studies (October 16, 2024), https://www.csis.org/events/csis-sasakawa-peace-foundation-conference-extended-deterrence-asia (accessed October 16, 2024); also see Jacek Durkalec, "U.S. Extended Deterrence in Europe and in the Asia-Pacific: Similarities, Differences, and Interdependencies, Workshop Summary" (Livermore, CA: Center for Global Security Research, January 2018). https://cgsr.llnl.gov/content/assets/docs/Summary_Report_ED_JAN2018final.pdf. Accessed October 16, 2024.

307 S. Paul Choi, "U.S.-ROK Alliance Consultative Mechanisms: Strengthening Deterrence, Providing Reassurance, Facing an Enduring Challenge," KEI (March 14, 2023). https://keia.org/the-peninsula/u-s-rok-alliance-consultative-mechanisms-strengthening-deterrence-providing-reassurance-facing-an-enduring-challenge/. Accessed October 17, 2024.

308 Brad Roberts, *The Case for U.S. Nuclear Weapons in the 21st Century* (Stanford, CA: Stanford University Press, 2016), p. 203.

309 Terrance Roehrig, *Japan, South Korea, and the United States Nuclear Umbrella: Deterrence After the Cold War* (New York: Columbia University Press, 2017), pp. 130-134.

In 2015, the EDPC was renamed the Deterrence Strategy Committee (DSC) when it merged with the Counter-Missile Capabilities Committee.[310] Today, the DSC is led by the South Korea's deputy minister of defense and by the regional and functional U.S. deputy assistant secretaries of defense. In October 2013, the DSC's work led to a Tailored Deterrence Strategy document agreed to by defense ministers.[311] According to the joint communiqué, this strategic framework "strengthens the integration of alliance capabilities to maximize their deterrence effects."[312] At the time, this strategy signaled bilateral agreement on leveraging not only the U.S. nuclear umbrella, but also the conventional strike and missile defense capabilities–of both the United States and South Korea–to deter North Korea's nuclear and other WMD threats.[313]

Because the practice of deterrence relies as much on other tools of national power, such as diplomacy and economic statecraft, as well as military might, South Korea and the United States also established in 2016 an additional consultative mechanism, the high-level Extended Deterrence Strategy and Consultation Group (EDSCG). This body elevated official consultations of the DSC from the U.S. deputy assistant secretary level to the assistant secretary level, with co-chairs representing the U.S. Departments of Defense and State, alongside counterparts from the ROK's defense and foreign ministries. A 2016 joint statement noted that the EDSCG conducts "comprehensive and in-depth discussions on strategic and policy issues regarding extended deterrence against North Korea, including how to better

310 U.S. Department of Defense, "8th Korea-U.S. Integrated Defense Dialogue (KIDD)," press release (September 24, 2015), https://dod.defense.gov/Portals/1/Documents/pubs/Press_Statement_8th_KIDD_Sep24_OSD_FINAL.pdf. (accessed October 17, 2024); S. Paul Choi, "U.S.-ROK Alliance Consultative Mechanisms: Strengthening Deterrence, Providing Reassurance, Facing an Enduring Challenge," KEI (March 14, 2023).

311 Karen Parrish, "U.S., South Korea Announce 'Tailored Deterrence' Strategy," United States Forces Korea, American Forces Press Service, News (October 2, 2013). https://www.usfk.mil/Media/Newsroom/News/Article/600966/us-south-korea-announce-tailored-deterrence-strategy/. Accessed October 17, 2024.

312 U.S. Department of Defense, "Joint Communiqué: The 45th ROK-U.S. Security Consultative Meeting, October 2, 2013, Seoul," (2013). https://dod.defense.gov/Portals/1/Documents/pubs/Joint%20Communique_%2045th%20ROK-U.S.%20Security%20Consultative%20Meeting.pdf. Accessed October 17, 2024.

313 Choi Hyun-joon, "US and South Korea agreed to "tailored deterrence strategy" at meeting in Seoul," Hankyoreh (October 3, 2013), https://english.hani.co.kr/arti/english_edition/e_international/605656.html. Accessed October 17, 2024.

leverage the full breadth of national power–using diplomacy, information, military, and economic elements."[314]

After a five-year hiatus, during which the EDSCG did not take place due to the approaches of the Moon and Trump administrations toward deterrence, extended deterrence, and alliance management, the Yoon and Biden administrations reactivated the bilateral consultation mechanism in 2022. Since then, reiterating the "U.S. unwavering commitment to provide extended deterrence for the ROK," the EDSCG and the DSC have continued work on "how best to tailor" alliance responses to the evolving North Korean threat.[315]

Moreover, in April 2023, the Washington Declaration between the United States and the ROK affirmed that South Korea "has full confidence in U.S. extended deterrence commitments and recognizes the importance, necessity, and benefit of its enduring reliance on the U.S. nuclear deterrent."[316] Established to implement the Washington Declaration, the Nuclear Consultative Group (NCG) is a bilateral consultative body aimed to strengthen the U.S.-ROK alliance and extended deterrence to contribute to peace and stability on the Korean Peninsula and in the region.[317] Since its inaugural meeting in July 2023, the NCG has made considerable progress. Both sides have agreed that it bolsters nuclear deterrence and the response capabilities of the alliance through substantive discussions on all areas of extended deterrence, including information sharing, consultative mechanisms, and joint planning and execution.[318]

314 U.S. Department of Defense, "Joint Statement for the Inaugural Meeting of the Extended Deterrence Strategy and Consultation Group, 20 December 2016," (2016). https://dod.defense.gov/Portals/1/Documents/pubs/Joint-Statement-for-the-Inaugural-Meeting-of-the-Extended-Deterrence-Strategy-and-Consultation-Group.pdf. Accessed October 17, 2024.

315 Ibid.

316 The White House, "Washington Declaration," (April 26, 2023). https://www.whitehouse.gov/briefing-room/statements-releases/2023/04/26/washington-declaration-2/. Accessed November 17, 2024.

317 U.S. Department of Defense, "Joint Press Statement on the 3rd Nuclear Consultative Group (NCG) Meeting," press release (June 10, 2024). https://www.defense.gov/News/Releases/Release/Article/3801107/joint-press-statement-on-the-3rd-nuclear-consultative-group-ncg-meeting/. Accessed November 22, 2024.

318 U.S. Department of State, "The United States of America-Republic of Korea Nuclear Consultative Group (NCG)," Office of the Spokesperson, fact sheet (January 10, 2025). https://2021-2025.state.gov/office-of-the-spokesperson/releases/2025/01/the-united-states-of-america-republic-of-korea-nuclear-consultative-group-ncg/. Accessed March 17, 2025.

On one hand, South Korea publicly highlights the importance of its alliance with the United States; on the other hand, doubts persist in Seoul about whether it can fully rely on the United States to effectively complement its own efforts to ensure security when needed. South Korea's anxiousness and sense of urgency concerning the North's nuclear threat has increased as Pyongyang's recent doctrine involves the possibility of preemptive use of its nuclear weapons against South Korea. This fear of abandonment coupled with their own perception of relative weakness has fueled a strong desire for increased U.S. reassurance in consultations, public messaging, and other more concrete demonstrations of capabilities. Additionally, the ROK has long feared it is a second-tier ally behind Japan.

Strategic Policy Dialogue (SPD) with Australia

The United States also has meaningful annual consultations with Australia through the Strategic Policy Dialogue (SPD), which has deepened mutual understanding on strategic and nuclear threats in the region. Established in 2019, the SPD is an annual forum for the United States and Australia to discuss cooperation on deterrence, including on extended deterrence, arms control, and the maintenance of regional stability in the Indo-Pacific.[319] There have been six dialogues since the SPD's inception. In the last four years, the U.S. delegation has been co-chaired by the Assistant Secretary of the Bureau of Arms Control, Verification and Compliance, Department of State and the Principal Deputy Assistant Secretary of Defense for Space Policy, Office of the Secretary of Defense, Department of Defense. The Australian side is co-chaired by the First Assistant Secretary International Security, Department of Foreign Affairs and Trade and First Assistant Secretary Strategic Policy, Department of Defense. As a policy forum, both sides have agreed that it has enhanced the ability for Australia and the United States to work together to deter security threats and coordinate regional messaging.

Both Australia's conservative and center-left governments have regarded U.S. extended deterrence as key to the country's long-term security. However, the consultation mechanisms are not as robust as those with South Korea or Japan. According Frühling and O'Neil, this is not based on U.S. reticence, but it has been because of a lack of demand from Canberra, which "stems from a preference for maintaining strategic distance from Washington when it comes to nuclear

319 U.S. Department of State, "2024 U.S.-Australia Strategic Policy Dialogue: Media Note," Office of the Spokesperson (February 28, 2024). https://www.state.gov/2024-u-s-australia-strategic-policy-dialogue/. Accessed October 18, 2024.

weapons."[320] However, this appears to be changing. As Australia's 2024 National Defence Strategy states, "Australia's best protection against the increasing risk of nuclear escalation is US extended nuclear deterrence, and the pursuit of new avenues of arms control."[321] Moreover, according to both Hood and Cormier, while there is no public U.S. endorsement of Australia's interpretation of Article II as necessitating a nuclear alliance, neither are there any U.S. public statements that contradict it.[322]

The depth of Indo-Pacific alliances was especially exemplified in September 2021 with the announcement of AUKUS, a security partnership between Australia, the United Kingdom, and the United States, aimed at promoting a free, open, secure, and stable Indo-Pacific. Australia, a steadfast ally that shares democratic values and has fought alongside the United States for over a century, plays a pivotal role in this partnership. The central initiative—technical collaboration and acquisition of conventionally-armed, nuclear-powered submarines (SSNs)—will enhance Australia's ability to support allied regional posture and reach. Additionally, AUKUS strengthens information sharing and technological cooperation, leveraging combined resources and expertise to ensure lasting peace in the Indo-Pacific.[323] The agreement also promotes collaboration in advanced technologies, including cybersecurity, artificial intelligence, quantum technologies, and undersea capabilities, while deepening intelligence and defense information sharing. AUKUS aims to counterbalance China's growing influence, reinforce alliances, and uphold a free, open, and rules-based Indo-Pacific order. The ambiguity it creates—Red cannot discern whether it is a U.S. or Australian submarine—serves a deterrence purpose

320 Stephan Frühling and Andrew O'Neil, *Partners in Deterrence: U.S. Nuclear Weapons and Alliances in Europe and Asia* (Manchester, UK: Manchester University Press, 2021), pp. 154-155.

321 Government of Australia, Department of Defence, *National Defence Strategy* (2024), p. 14. https://www.defence.gov.au/about/strategic-planning/2024-national-defence-strategy-2024-integrated-investment-program. Accessed September 18, 2024. This statement is copied almost verbatim from the 2023 National Defence Strategy. See Government of Australia, Department of Defence, *National Defence Strategy* (2023), p. 38. https://www.defence.gov.au/about/reviews-inquiries/defence-strategic-review. Accessed September 18, 2024.

322 Anna Hood and Monique Cormier, "The Role of ANZUS in Australia's Reliance on US Extended Nuclear Deterrence," Australian Institute of International Affairs (September 16, 2021).

323 Congressional Commission on the Strategic Posture of the United States, *America's Strategic Posture, Final Report* (October 2023), p. 77.

and enables Australia to project power far beyond its traditional capabilities.[324]

Assuring through Trilateral Cooperation

Trilateral cooperation among South Korea, the United States, and Japan was initiated in 1999 with the establishment of the Trilateral Coordination and Oversight Group, aimed at addressing the North Korean nuclear issue.[325] However, the initiative encountered difficulties due to differences in the strategic interests of the three countries regarding how to resolve the issue. For example, in the early 2000s, South Korea placed particular emphasis on improving relations with China, with the hope that Beijing would play a constructive role in resolving the North Korean nuclear issue.[326] Whereas, the Abe administration in Japan supported the Obama administration's rebalancing policy and joined the U.S.-led Trans-Pacific Partnership. Moreover, the ROK-Japan relations have been troubled by many factors and constraints,[327] further deteriorating their relations and causing the ROK-U.S.-Japan

324 For a discussion on the potential deterrence value, see Luke Gosling, "Deterring at a distance: The strategic logic of AUKUS," Lowy Institute (June 24, 2024), https://www.lowyinstitute.org/publications/deterring-distance-strategic-logic-aukus (accessed March 17, 2025); Jim Garamone, "AUKUS Plan Looks to Shore up Deterrence, Promote Stability," *DOD News* (March 14, 2023), https://www.defense.gov/News/News-Stories/Article/Article/3328430/aukus-plan-looks-to-shore-up-deterrence-promote-stability/ (accessed March 17, 2025).

325 For a more extensive historical account of trilateral cooperation, refer to *Roundtable: Pathways for U.S.-ROK-Japan Cooperation: Strengthening Trilateral Ties Amid Uncertainty*, *Asia Policy* 20, no. 1 (January 2025), pp. 1-80. https://www.nbr.org/wp-content/uploads/pdfs/publications/asiapolicy20-1_us-rok-japan_rt_january2025.pdf. Accessed February 12, 2025.

326 Gilbert Rozman, Sue Mi Terry, and Eun A. Jo, *South Korea's Wild Ride: The Big Shifts in Foreign Policy from 2013 to 2022* (London, UK: Routledge, 2023), pp. 16–19.

327 For example, in 2018, relations between South Korea and Japan hit a new low due to several incidents, including the dissolution of the Reconciliation and Healing Foundation, South Korea's Supreme Court ruling on WWII forced labor, Japan's low-altitude military flights near ROK naval ships, radar lock-on incidents, and disputes over Japan's Hashima Island UNESCO listing.

trilateral cooperation to suffer.[328] The ROK-Japan relations were even described as the "weak link" in the trilateral cooperation.[329]

In recent years, the trilateral partnership between the United States, Japan, and South Korea has also re-emerged[330] as an effective institutional channel to further the ROK-U.S.-Japan trilateral partnership and committed to continue close consultation.[331] The Biden administration made a concerted effort to deepen trilateral cooperation with Japan and the ROK, elevating the Trilateral Ministerial Meeting (TMM) as the central mechanism for regional deterrence planning. High-level intergovernmental security dialogues—held in Phnom Penh in 2022, Camp David in 2023,[332] and on numerous other occasions—provided a vital platform for renewed expert and ministerial-level engagement. This cooperation was institutionalized in July 2023 through the Memorandum of Cooperation on the Trilateral Security Cooperation Framework, solidifying the TMM as a cornerstone of regional security collaboration.

For example, in 2023, the three allies implemented a data-sharing mechanism to exchange real-time early warning information for detecting and assessing ballistic missile launches from North Korea. Moreover, the execution of a new multi-domain trilateral exercise, FREEDOM EDGE, was announced at the Camp David Summit

328 As Roberts notes, in the event of a war on the Korean Peninsula, defending South Korea would be impossible without Japan's support, as it hosts eight bases under the UN Command in support of the ROK. Additionally, deploying forces from these bases would require prior consultation with Japan's prime minister. Japan would also be expected to provide logistical support to U.S. forces during a conflict. See Brad Roberts, *The Case for U.S. Nuclear Weapons in the 21st Century* (Stanford, CA: Stanford University Press, 2016), p. 204.

329 Wooseon Choi, "New Horizons in Korea-U.S.-Japan Trilateral Cooperation," Center for Strategic and International Studies (June 27, 2024). https://www.csis.org/analysis/new-horizons-korea-us-japan-trilateral-cooperation. Accessed October 10, 2024.

330 U.S. Indo-Pacific Command, "United States-Japan-Republic of Korea Trilateral Ministerial Meeting (TMM) Joint Press Statement," news article (June 5, 2023). https://www.pacom.mil/Media/News/News-Article-View/Article/3417478/united-states-japan-republic-of-korea-trilateral-ministerial-meeting-tmm-joint/. Accessed September 30, 2024.

331 This was considered by some as a "yawning deterrence gap" during the Trump administration's first term, and urgent attention was needed to repair not only the bilateral U.S.-Japan and U.S.-ROK alliances, but also the trilateral mechanism. See Shane Smith and Brad Glosserman, "Three's Company? Prioritizing Trilateral Deterrence Against North Korea," War on the Rocks (March 10, 2021). https://warontherocks.com/2021/03/threes-company-prioritizing-trilateral-deterrence-against-north-korea/. Accessed October 30, 2025.

332 "Fact Sheet: The Trilateral Leaders' Summit at Camp David," U.S. Mission Japan (August 18, 2023). https://jp.usembassy.gov/fact-sheet-trilateral-summit-at-camp-david/. Accessed March 17, 2025.

and took place in June 2024. This exercise enhanced readiness by focusing on cooperative ballistic-missile defense, air defense, anti-submarine warfare, and defensive cyber training.[333]

In June 2024, U.S. Secretary of Defense Lloyd J. Austin III, Japan Minister of Defense Kihara Minoru, and ROK Minister of National Defense Shin Won-sik convened a TMM in Singapore.[334] They discussed shared regional security concerns, reviewed the implementation of trilateral security cooperation lines of effort presented at the historic Camp David Summit and discussed new initiatives to strengthen and institutionalize trilateral security cooperation to contribute to peace and stability on the Korean Peninsula, in the Indo-Pacific region, and beyond.[335]

At the second ministerial meeting of the year, in October 2024, Vice Foreign Ministers of the Republic of Korea and Japan and the Deputy Secretary of State of the United States met in Seoul to discuss the progress made across multiple lines of efforts to broaden the scope of trilateral partnership in the Indo-Pacific region, including through the trilateral Indo-Pacific Dialogue. They applauded the successful inaugural trilateral multi domain exercise FREEDOM EDGE and the signing of the Memorandum of Cooperation on the Trilateral Security Cooperation Framework that illustrate the three countries' shared commitment to enhance peace and stability throughout the region. The United States reiterated that its commitments to the defense of the ROK and Japan are ironclad and reaffirmed the United States' commitment to strengthen extended deterrence provided through the ROK-U.S. Alliance and the Japan-U.S. Alliance.[336]

Moreover, the United States, Japan, and Australia also convene in a trilateral forum, known as the Trilateral Defense Ministers' Meeting (TDMM). This key forum emphasizes trilateral partnership on various defense issues, such as ISR

333 U.S. Indo-Pacific Command, "Trilateral Statement: First Execution of Multi-Domain Japan - ROK - U.S. Exercise FREEDOM EDGE," USINDOPACOM Public Affairs (June 27, 2024). https://www.pacom.mil/Media/News/News-Article-View/Article/3819042/trilateral-statement-first-execution-of-multi-domain-japan-rok-us-exercise-free/. Accessed March 17, 2025.

334 U.S. Department of Defense, "United States-Japan-Republic of Korea Trilateral Ministerial Meeting (TMM) Joint Press Statement," press release (June 2, 2024). https://www.defense.gov/News/Releases/Release/Article/3793913/united-states-japan-republic-of-korea-trilateral-ministerial-meeting-tmm-joint/. Accessed October 18, 2024.

335 Ibid.

336 U.S. Department of State, "Joint Statement on the Republic of Korea-U.S.-Japan Trilateral Vice Foreign Ministerial Meeting," Office of the Spokesperson (October 16, 2024). https://www.state.gov/joint-statement-on-the-republic-of-korea-u-s-japan-trilateral-vice-foreign-ministerial-meeting-2/. Accessed October 18, 2024.

(Intelligence, Surveillance, and Reconnaissance) efforts, trilateral F-35 joint training, and strategic dialogues on regional issues.[337] In November 2024, the ministers held their 14th TDMM, reaffirming their commitment to the complete denuclearization of the Korean Peninsula.[338]

Understanding the Indo-Pacific Security Environment: Causes Behind U.S. Extended Nuclear Deterrence in the Region

The Indo-Pacific region has emerged as a critical focal point for global security, driven by its strategic importance, economic dynamism, and the growing competition among major powers. The United States' extended nuclear deterrence in the Indo-Pacific is a cornerstone of its security strategy, aimed at maintaining regional stability, protecting its allies, and countering the influence of adversarial powers. The causes of U.S. extended nuclear deterrence in the Indo-Pacific are rooted in the region's complex security environment, characterized by the rise of China, North Korea's nuclear ambitions, and the need to reassure allies and partners of U.S. commitments.

One of the primary drivers of U.S. extended nuclear deterrence in the Indo-Pacific is the rise of China as a regional and global power. Over the past few decades, China has significantly expanded its military capabilities, modernized and expanded its nuclear arsenal, and adopted an assertive posture in territorial disputes, particularly in the South China Sea and East China Sea. These actions have raised concerns among U.S. allies and partners, such as Japan, South Korea, Australia, the Philippines, and Taiwan about the potential for coercion or conflict. By extending its deterrence umbrella, the United States seeks to counterbalance China's growing influence, prevent aggression, and uphold the rules-based international order that underpins regional stability.

While the United States has sought arms control opportunities to enhance security and strategic stability, China's lack of transparency and refusal to engage in meaningful dialogue regarding its nuclear force structure complicate these efforts.

337 For more information, see U.S. Department of Defense, "United States-Japan-Australia Trilateral Defense Ministers' Meeting (TDMM) 2024 Joint Statement, May 2, 2024," Immediate Release (May 3, 2024). https://www.defense.gov/News/Releases/Release/Article/3764063/united-states-japan-australia-trilateral-defense-ministers-meeting-tdmm-2024-jo/. Accessed March 17, 2025.

338 U.S. Department of Defense, "Australia-Japan-United States Trilateral Defense Ministers' Meeting November 2024 Joint Statement," Immediate Release (November 16, 2024). https://www.defense.gov/News/Releases/Release/Article/3967118/australia-japan-united-states-trilateral-defense-ministers-meeting-november-202/. Accessed March 17, 2025.

Moreover, China has repeatedly condemned the United States' efforts to reassure its allies in Northeast Asia.[339] In July 2024, the PRC foreign-ministry spokesperson called U.S. extended deterrence a Cold War relic that heightens regional tensions.[340] The comment echoed similar statements made by the Chinese delegation to the Preparatory Committee for the 2026 NPT Review Conference in August 2023.[341]

According to the U.S. Department of Defense's 2024 China Power Report, PRC messaging to Indo-Pacific countries seeks to cast the United States and its allies as untrustworthy external actors interfering with internal affairs, hegemonic regional aggressors, and violators of international law. Beijing uses official government statements, state-run media, and online disinformation to promote a narrative that Washington seeks to initiate a new Cold War by pressuring Indo-Pacific countries to ally with the United States and strategically encircle the PRC. The PRC's Indo-Pacific messaging efforts further recast Washington's regional engagements and partnerships, including the Quadrilateral Security Dialogue (Quad) and AUKUS, as hegemonic efforts to effectuate bloc-based regional confrontation and undermine regional stability.[342]

North Korea's persistent development of nuclear weapons and ballistic missile capabilities is another critical threat to regional stability and a key driver of U.S. extended nuclear deterrence in the Indo-Pacific. Pyongyang's provocative behavior—including frequent missile tests and threats against U.S. allies like South

339 Similarly, in August 2024, a DPRK state news agency commentary asserted that 'the strengthened tripartite security cooperation trumpeted by the US has only made the peoples of Japan and the puppet ROK cannon fodder of nuclear war'. "KCNA Commentary on Serious Tripartite Security Crisis," *Rodong Sinmun* (August 14, 2024). https://kcnawatch.org/newstream/1723603830-582170357/KCNA-Commentary-on-Serious-Tripartite-Security-Crisis/. Accessed March 14, 2025.

340 Ministry of Foreign Affairs, The People's Republic of China, "Foreign Ministry Spokesperson Lin Jian's Regular Press Conference on July 30, 2024" (last updated July 30, 2024). https://www.mfa.gov.cn/eng/xw/fyrbt/202407/t20240731_11463972.html. Accessed March 14, 2025.

341 See "Upholding the authority of the Treaty on the Non-Proliferation of Nuclear Weapons, Serving international security and development, Statement by Director-General of the Department of Arms Control of the Foreign Ministry of China Sun Xiaobo at the General Debate of the First Meeting of the Preparatory Committee for the 2026 NPT Review Conference" (Vienna, Austria, August 2023). https://docs-library.unoda.org/Treaty_on_the_Non-Proliferation_of_Nuclear_Weapons_-Preparatory_Committee_for_the_Eleventh_Review_ConferenceFirst_session_(2023)/China's_ENG_statement_at_the_General_Debate.pdf. Accessed March 14, 2025.

342 U.S. Department of Defense, *Military and Security Developments Involving the People's Republic of China, 2024,* Annual Report to Congress, Office of the Secretary of Defense (2024), p. 84.

Korea and Japan—has heightened tensions and underscored the necessity of U.S. commitments to defend its allies, including through the potential use of nuclear weapons. These commitments serve as vital reassurance to U.S. allies directly threatened by North Korea's aggressive posture.

Since the mid-2000s, North Korea has prioritized the development of its military capabilities, particularly focusing on the ability to strike adversaries with both conventional and WMD-armed ballistic missiles. This strategic emphasis is coupled with a conventional military force capable of inflicting significant damage on South Korea.[343] According to the U.S. DIA, under the leadership of Kim Jong Un, several trends have emerged that reflect Pyongyang's current strategic priorities. These include the routinization of ballistic missile flight tests, an expansion in the numbers and types of nuclear-capable delivery systems, and a public emphasis on the connection between North Korea's nuclear weapons program and its ballistic missiles.[344] The regime has actively sought to persuade international audiences that it possesses the capability for nuclear-armed ballistic missile strikes against both the United States and its regional allies. Kim has publicly claimed advancements in miniaturized, tactical nuclear weapons and "super-large hydrogen bombs," signaling North Korea's intent to develop a survivable and flexible nuclear arsenal.[345] In 2022 alone, North Korea conducted nearly 100 missile tests, a record-breaking number that alarmed both Japan and South Korea. These developments, combined with high-level rhetoric indicating a willingness to use nuclear weapons at the first sign of a U.S. or South Korean strike, suggest that North Korea may contemplate nuclear use at any stage of a crisis or conflict.[346] As North Korea's force size and capabilities improve, its rationale for nuclear weapons appears to be shifting from a focus solely on deterrence to a strategy that includes limited or discretionary nuclear use on the Korean Peninsula, aimed at managing escalation and ending a conflict quickly.[347]

343 U.S. Defense Intelligence Agency, *Nuclear Challenges: The Growing Capabilities of Strategic Competitors and Regional Rivals* (October 2024), p.19; Office of the Secretary of Defense, *Military and Security Developments Involving the Democratic People's Republic of Korea* (2015), pp. 9-14, https://www.globalsecurity.org/military/library/report/2016/2015_dprk_military-security-developments.pdf. Accessed March 14, 2025.

344 U.S. Defence Intelligence Agency, *Nuclear Challenges: The Growing Capabilities of Strategic Competitors and Regional Rivals* (October 2024), p. 19.

345 Ibid., p. 22.

346 Ibid., p. 21.

347 Ibid.

North Korea's diversification of its missile arsenal, including solid-fueled systems and ICBMs, further raises the stakes.[348] The regime has demonstrated the capability to strike targets on the Korean Peninsula, Japan, and potentially the U.S. homeland. In response, the United States has pursued a comprehensive missile defeat strategy, as outlined in the 2022 Missile Defense Review (MDR), which highlights the complementary roles of missile defenses and the U.S. nuclear arsenal in deterring North Korean aggression. By enacting laws affirming its nuclear power status and establishing open-ended conditions for nuclear use, North Korea has solidified its command-and-control structure, with Kim Jong Un as the sole authority for nuclear weapon employment under the "firepower strike plan" designed primarily for use against the United States.[349]

The growing sophistication and scale of North Korea's nuclear and missile programs have required the United States to reaffirm and strengthen its extended nuclear deterrence posture in the Indo-Pacific. This includes integrating missile defense systems with allied capabilities and maintaining the credibility of its nuclear umbrella. Additionally, the 2018 NPR introduced a change in U.S. declaratory policy, explicitly stating that any use of a nuclear weapon by North Korea would result in the end of the Kim regime, a position that was reaffirmed in the 2022 NPR. As Pyongyang continues to improve its force size and capabilities, the United States has continued to reiterate its commitment to denuclearization of North Korea.[350] For example, following the September 2024 Quad summit in Wilmington, Delaware, leaders of the United States, Japan, India, and Australia issued the "Wilmington Declaration," condemning North Korea's ballistic missile launches and pursuit of

348 Solid-propellant missiles offer operational advantages over liquid-fueled systems, eliminating the time required to fuel a missile before firing it.

349 Office of the Director of National Intelligence, *Annual Threat Assessment of the U.S. Intelligence Community* (February 6, 2023), p. 20, https://www.dni.gov/files/ODNI/documents/assessments/ATA-2023-Unclassified-Report.pdf (accessed March 14, 2025); Defense Intelligence Agency, *North Korea Military Power*: *A Growing Regional and Global Threat* (2021), p. 18, https://www.dia.mil/Portals/110/Documents/News/North_Korea_Military_Power.pdf (accessed March 14, 2025).

350 While the Trump administration's policy remains to be fully clarified, it has reiterated its commitment to denuclearization on the Korean Peninsula. However, recent confusion has arisen regarding President Trump's reference to North Korea as a "nuclear power." Refer to "What's in a name? Trump's repeated references to North Korea as 'nuclear power,'" *Hankyoreh* (March 19, 2025). https://english.hani.co.kr/arti/english_edition/e_northkorea/1187779.html. Accessed March 19, 2025.

nuclear weapons, calling for complete denuclearization of the peninsula.[351] In response, North Korea's state media has accused the United States of fueling a "new Cold War in Asia" by citing the Quad and AUKUS as examples of U.S. efforts to strengthen military alliances that heighten regional tensions.[352]

Lastly, U.S. extended deterrence in the Indo-Pacific is driven by the need to reassure allies and maintain the credibility of its security commitments. The region is home to key U.S. allies and partners, including Japan, South Korea, Australia, the Philippines, and Taiwan, whose security is vital to U.S. strategic interests. Extended deterrence, supported by forward-deployed forces, military alliances, and the U.S. nuclear umbrella, reinforces the trust of these nations in America's ability and willingness to defend them. This reassurance is crucial in deterring adversaries, maintaining allied cohesion, and preventing the emergence of security vacuums that could destabilize the region.

South Korea's response to North Korean provocations is a critical variable in this dynamic. Should the ROK take the step of pursuing nuclearization, some experts believe that Japan would follow suit, further complicating the security environment in the region.[353] Of particular concern to Beijing and Pyongyang are reported conversations among South Korean officials about whether to request the redeployment of U.S. tactical nuclear weapons to the ROK.[354] Moreover, on January 11, 2023, President Yoon Suk Yeol offered this assessment:

> Of course, if problems become more serious, the Republic of Korea could deploy tactical nuclear weapons here, or we could acquire our own nuke as well. If that happens, it would not take long to [develop] one for ourselves in a short period of time using our science and

351 "The Wilmington Declaration Joint Statement from the Leaders of Australia, India, Japan, and the United States," U.S. Embassy Singapore, Statements and Releases (September 23, 2024). https://sg.usembassy.gov/the-wilmington-declaration-joint-statement-from-the-leaders-of-australia-india-japan-and-the-united-states/. Accessed March 17, 2025.

352 Taejun Kang, "North Korea blames US for waging a 'new Cold War' in Asia with military alliances," *Radio Free Asia* (September 22, 2024). https://www.rfa.org/english/news/korea/north-korea-us-quad-09222024231316.html. Accessed March 17, 2025.

353 Jonathan Redi Hunt, "Out of the Mushroom Cloud's Shadow," RAND Commentary (August 6, 2015). https://www.rand.org/pubs/commentary/2015/08/out-of-the-mushroom-clouds-shadow.html. Accessed March 14, 2025.

354 However, as reiterated in the 2023 Washington Declaration, the United States has no plans to redeploy tactical nuclear weapons to the Korean Peninsula.

technology in the future.[355]

This was the first ever public remarks by a South Korean head of state on nuclear weaponization, and as Cha notes, it broke "longstanding taboos in the US-ROK alliance against discussing this security option."[356] Meanwhile, according to a 2024 public opinion poll, two-thirds of South Korea's public support the idea of a sovereign nuclear-weapons program.[357] Additionally, in 2024, Defense Minister, Kim Yong-hyun, stated that nuclear armament is "included among all possible options" being considered to respond to DPRK nuclear threats.[358]

Assumptions Related to U.S. Extended Nuclear Deterrence in Indo-Pacific

The United States' commitment to extended nuclear deterrence has been a cornerstone of its security strategy in the Indo-Pacific, aimed at reassuring allies and deterring aggression from adversaries. This commitment has evolved over decades, reflecting the region's unique security dynamics and the absence of formal nuclear sharing arrangements akin to those in NATO. As the Indo-Pacific faces growing challenges, including the rapid military modernization of China and persistent nuclear threats from North Korea, it is an appropriate time to evaluate the future of these longstanding commitments.

U.S. extended nuclear deterrence in the Indo-Pacific is built on several key assumptions that shape its strategy and implementation. These assumptions,

355 See entire speech text, Office of the President Republic of Korea, "Written Briefing on President Yoon's Concluding Remarks on the Ministry of Foreign Affairs and Ministry of National Defense Work Report," (January 11, 2023). https://www.president.go.kr/newsroom/briefing/GvCftpuP. Accessed March 14, 2025.

356 Victor Cha, "Eyes Wide Open: Strategic Elite Views of South Korea's Nuclear Options," *The Washington Quarterly* 47, no. 2 (July 2024), pp. 23-40. DOI: 10.1080/0163660X.2024.2365031. Accessed October 10, 2024.

357 "KINU's Announcement of the Result of the 2024 KINU Unification Survey: North Korea's Two-State Claim / US Presidential Election Outlook and ROK-US Relations," Korea Institute for National Unification (KINU) (June 27, 2024). https://www.kinu.or.kr/eng/board/view.do?nav_code=eng1678858138&code=78h7R6ucKsuM&idx=24481. Accessed March 14, 2025.

358 "Defense minister nominee says he is open to idea of S. Korea's nuclear armament," *The Korea Times* (September 2, 2024), https://www.koreatimes.co.kr/www/nation/2024/09/113_381702.html%22%20HYPERLINK%20%22 (accessed March 14, 2025); Hyonhee Shin and Josh Smith, "Exclusive: South Korean nuclear weapons would fracture US ties, defence chief says," Reuters (August 8, 2024), https://www.reuters.com/world/south-korean-nuclear-weapons-would-fracture-us-ties-defence-chief-says-2024-08-07/ (accessed March 14, 2025).

outlined below, influence U.S. policy decisions regarding force posture, alliance management, and strategic communication with both allies and adversaries in the region. Chapter 4 will explore whether and how these assumptions are being challenged or redefined in the face of evolving regional threats and shifting geopolitical dynamics.

Key assumptions regarding U.S. extended nuclear deterrence practices and commitments in the Indo-Pacific include:

1. **Bilateral Nature of Alliances**
   The United States manages its alliances with Japan, South Korea, and Australia on a bilateral basis, continually developing and institutionalizing these partnerships. This approach allows the United States to tailor its commitments and strategies to the unique security needs and geopolitical realities of each ally, ensuring more effective cooperation and coordination.

2. **Reliance on U.S. Strategic Nuclear Forces and Forward-Deployable DCA**
   Allies in the Indo-Pacific rely heavily on U.S. strategic nuclear forces and the option of forward-deployable DCA to ensure credible extended nuclear deterrence. This reliance underscores the critical role of U.S. military presence and capabilities in maintaining regional stability and deterring potential adversaries.

3. **Doubts About U.S. Credibility and Cycles of Nuclear Hedging**
   U.S. allies in the Indo-Pacific have experienced periodic doubts about the credibility of U.S. extended nuclear deterrence commitments. These doubts have led to cycles of nuclear hedging, particularly in South Korea, where domestic discussions about developing independent nuclear capabilities have gained traction in response to perceived gaps in U.S. assurances.

4. **Divergent Threat Perceptions Among Allies**
   U.S. allies in Northeast Asia, particularly Japan and South Korea, do not share identical views of the regional threat environment. These differences are shaped by varying perceptions of threats from North Korea, China, and other regional actors, as well as differing levels of trust in U.S. commitments.

5. **Consultative Mechanisms Have Ensured Progress**
   Existing consultative mechanisms have institutionalized sustained leadership attention on these issues, facilitated active policy discussions and development, and ensured continuous progress on practical agendas

to strengthen regional deterrence architectures.

U.S. extended nuclear deterrence in the Indo-Pacific is shaped by a complex set of assumptions and dynamics that underscore both its strengths and challenges. The bilateral nature of alliances allows the United States to tailor its commitments to the unique security needs of Japan, South Korea, and Australia, while its strategic nuclear forces and forward-deployed capabilities remain central to ensuring credible deterrence. However, periodic doubts about U.S. credibility have driven cycles of nuclear hedging, particularly in South Korea, highlighting the need for sustained reassurance. Divergent threat perceptions among allies further complicate regional coordination, but consultative mechanisms have played a critical role in fostering dialogue, addressing concerns, and advancing practical measures to strengthen deterrence architectures. Together, these factors illustrate the delicate balance required to maintain stability and trust in the region.

The Security Environment: Old, New, and Emerging Challenges in a Multipolar World

The 2018 National Defense Strategy Commission was the first to publicly highlight that the United States "might struggle to win, or perhaps lose, a war against China or Russia…and 'is particularly at risk of being overwhelmed should its military be forced to fight on two or more fronts simultaneously.'[359] The 2018 Commission called out how the United States has abandoned the longstanding "two war" construct for a "one major war" sizing and shaping construct, and emphasized: "In the event of large-scale conflict with China or Russia, the United States may not have sufficient remaining resources to deter other adversaries in one—let alone two—other theaters by denying them the ability to accomplish their objectives without relying on nuclear weapons."[360]

The 2022 NDS also adopted a "one major war" sizing construct, while the 2022 NPR further noted that "[b]y the 2030s the United States will, for the first time in its history, face two major nuclear powers as strategic competitors and potential adversaries."[361] These realizations and articulations represent significant turning points for U.S. nuclear policy, particularly as it marks the first time in our country's history that we are confronting a threat of this magnitude.

The 2023 Strategic Posture Commission went further in outlining the following: "Simultaneously deterring two nuclear-armed adversaries, assuring a multitude of concerned Allies, and coping with other strategic issues will strain attempts

359 National Defense Strategy Commission, *Providing for the Common Defense: The Assessment and Recommendations of the National Defense Strategy Commission* (November 2018), p. vi.

360 Congressional Commission on the Strategic Posture of the United States, *America's Strategic*
Posture, Final Report (October 2023), p. 90.

361 U.S. Department of Defense, *2022 Nuclear Posture Review*, in *2022 National Defense Strategy of the United States of America* (2022), p. 4.

to maintain situational awareness in order to warn of strategic crisis or conflict, ultimately stressing U.S. efforts to maintain an effective strategic posture."[362]

Discussions surrounding the "two-peer problem" and the challenge of insufficient resources to deter adversaries in multiple theaters have gained increasing prominence. However, an often-overlooked aspect of this debate is the role of extended nuclear deterrence, assurance, and U.S. allies. In a two-peer environment, assuring allies may become more complex as extended nuclear deterrence requirements evolve to address the challenges posed by multiple peer competitors. This necessitates a critical evaluation of extended nuclear deterrence institutions and relationships to determine whether they remain relevant or have become outdated relics of a previous era.

The crux of this issue lies in whether the United States and its allies can maintain conventional superiority in both theaters simultaneously or whether U.S. and allied reliance on nuclear weapons will grow to compensate for conventional inferiority in a second theater conflict. Opting for the latter would require significant changes to the U.S. nuclear force structure, as the current planned force is not designed to support such a strategy. Consequently, the emergence of the two-nuclear-peer problem demands a reassessment of key assumptions underpinning U.S. extended nuclear deterrence practices and strategy, with particular attention to how nuclear and conventional forces are balanced in addressing this unprecedented challenge.

Before we can pursue a reasonable strategic vision for extended nuclear deterrence, we must first take stock of the tectonic shifts that have transformed the global landscape: the emerging two-nuclear-peer problem (also known as the "three-body problem"), the increase in nuclear risk-taking and coercion, increasingly emboldened regional adversaries, and the growing alignment of adversaries—all of which are heightening anxiety among our allies. In this chapter, I will proceed by outlining the threats facing U.S. alliances in a multipolar environment and explore the potential implications for U.S. extended deterrence policy and regional nuclear deterrence, including how our assumptions have or are changing.

362 Congressional Commission on the Strategic Posture of the United States, *America's Strategic*
Posture, Final Report (October 2023), p. 23.

Evolving Nuclear Peer Threats: The Implications of China's Military Buildup

The first tectonic shift is that China is deliberately and rapidly challenging our assumptions by building up its nuclear forces at a "breathtaking" pace,[363] on a scale not witnessed since the U.S.-Soviet arms race of the 1950s and 1960s. According to the U.S. Department of Defense's 2024 China Power Report:

> Over the next decade, the PRC probably will continue to rapidly modernize, diversify, and expand its nuclear forces. The PLA seeks a larger and more diverse nuclear force, comprised of systems ranging from low-yield precision strike missiles to ICBMs with multi-megaton yields to provide it options at every rung of the escalation ladder.[364]

Declassified U.S. intelligence assessments state that China's nuclear stockpile will reach rough quantitative parity with currently planned U.S.-deployed nuclear warheads by the mid-2030s (e.g., approximately 1,500 weapons by 2035), if China continues on its current trajectory.[365] This is in line with its goal of ensuring PLA modernization is "basically complete" that year, an important milestone on the road to Xi's goal of a "world class" military by 2049. Should this assessment prove accurate, the United States will face two peer nuclear adversaries for the first time in the nuclear age.[366] As the Strategic Posture Commission found:

> Due to China's nuclear buildup, the United States will no longer be able to treat the Chinese nuclear threat as a "lesser included case" of the

363 Ellie Kaufman and Barbara Starr, "US Military Nuclear Chief Sounds the Alarm About Pace of China's Nuclear Weapons Program," CNN (November 4, 2022). https://www.cnn.com/2022/11/04/politics/us-china-nuclear-weapons-warning/index.html. Accessed March 14, 2025.

364 U.S. Department of Defense, *Military and Security Developments Involving the People's Republic of China, 2024,* Annual Report to Congress, Office of the Secretary of Defense (2024), p. 101.

365 Ibid., p. 94.

366 Or even sooner. Recent public U.S. intelligence estimates of China's future nuclear arsenal have repeatedly underestimated both the pace and scale of China's nuclear buildup. For example, in 2023, the U.S. Department of Defense estimated that by 2027, China may possess up to 700 deliverable warheads. However, in 2024, the U.S. Department of Defense estimated the PRC has surpassed 600 operational nuclear warheads in its stockpile. See U.S. Department of Defense, *Military and Security Developments Involving the People's Republic of China, 2024,* Annual Report to Congress, Office of the Secretary of Defense (2024), p. 101.

> Russian nuclear threat. As a result, the United States must re-evaluate the size and composition of the U.S. nuclear force that would be adequate to fulfill longstanding roles of that force. These roles include deterrence, assurance, achieving objectives should deterrence fail, and hedging against adverse events.[367]

China's rapid nuclear buildup is challenging the current design of the U.S. nuclear force. Beijing's buildup is comprehensive, including both strategic and theater-range forces and the addition of an array of new capabilities. China is fielding a triad of strategic nuclear delivery systems, showing signs of adopting a launch under attack (LUA) posture for its ICBM force, and has tested potentially destabilizing new intercontinental range systems (e.g., fractional or multiple orbital bombardment systems [FOBS/MOBS] that could threaten a potentially unwarned preemptive attack on the United States). For the first time, China is developing survivable theater nuclear forces capable of conducting low-yield precision strikes on U.S. and allied/partner forces and infrastructure across East Asia. According to the U.S. DIA, China probably also seeks lower-yield nuclear warhead capabilities to provide proportional response options that its high-yield warheads cannot deliver.[368] Overall, a larger and more diverse Chinese nuclear force was not envisioned when the U.S. nuclear modernization program was originally designed.

Coupled with these nuclear-related advancements, China is also rapidly modernizing and expanding its conventional forces and already has the world's largest navy, which pose an increasing threat to U.S. forces and allies and partners in Asia. By the 2030s, China's conventional military buildup could flip the conventional military balance in Asia. This potential conventional imbalance could undermine deterrence of Chinese aggression by itself, but the impact could be exacerbated if China were contemplating either opportunistic aggression in the context of an already ongoing theater conflict between Russia and NATO, or collaborative Chinese-Russian aggression in both theaters. Finally, China is rapidly fielding new non-nuclear strategic capabilities in space and cyberspace. These capabilities have the potential to deny or diminish U.S. conventional forces' ability to project power effectively and possibly threaten U.S. nuclear command and control, further complicating the strategic deterrence landscape.

367 Congressional Commission on the Strategic Posture of the United States, *America's Strategic Posture, Final Report* (October 2023), p. 90.

368 U.S. Defence Intelligence Agency, *Nuclear Challenges: The Growing Capabilities of Strategic Competitors and Regional Rivals* (October 2024), p. viii.

Nuclear Risk-Taking and Coercion: Russian Threats and Anticipating China's Strategic Moves

A second shift is the rise in nuclear risk-taking and coercion. Russia remains a nuclear peer of the United States, one which may engage in further conventional aggression and nuclear coercion or use in the future. Moscow has what nuclear scientist Victor Mihailov has described as "a nuclear scalpel for every military problem in Europe."[369] Russian strategy and doctrine envision limited first use of theater nuclear weapons to coerce war termination on terms acceptable to Russia if losing a conventional war, and larger-scale use of theater nuclear forces to defeat NATO conventional forces, if coercive nuclear use fails. Russian strategy relies on strategic nuclear forces to deter a large-scale U.S. nuclear response against the Russian homeland while Russia escalates to limited nuclear war in theater. Thus, Russian strategy indicates that Russian leadership believes that limited nuclear use is unlikely to escalate out of control.[370] As Weaver concludes, Russia's invasion of Ukraine demonstrates both an appetite to take risk and a propensity to miscalculate while doing so, which makes Russian opportunistic or collaborative aggression against NATO states on its periphery a serious threat.[371] This is coupled with their threat perceptions and feelings of encirclement, their belief that the United States can be decoupled from Europe, and their desire to reshape the European security order by creating a Russian "sphere of influence" in the former Soviet space (or the

369 Quoted in Keith Payne and Mark Schneider, "Russia's New National Security Strategy," *Real Clear Defense* (February 11, 2016). https://www.realcleardefense.com/articles/2016/02/12/russias_new_national_security_strategy_109016-full.html. Accessed October 7, 2024.

370 As pointed out by U.S. experts on Russian military doctrine, Russian military doctrine and strategy, particularly in the nuclear realm, cannot be reduced to the simplistic and misleading label—"escalate to deescalate." For more on the Russian approach as a strategic deterrence, counter-escalation, and war-fighting strategy, see David Johnson, "Russia's Conventional Precision Strike Capabilities, Regional Crises, and Nuclear Thresholds," Livermore Papers on Global Security No. 3 (Livermore, CA: Center for Global Security Research, February 2018). https://cgsr.llnl.gov/sites/cgsr/files/2024-08/Precision-Strike-Capabilities-report-v3-7.pdf. Accessed March 14, 2025; Michael Kofman and Anya Loukianova Fink, "Escalation Management and Nuclear Employment in Russian Military Strategy," War on the Rocks (September 19, 2022), https://warontherocks.com/2022/09/escalation-management-and-nuclear-employment-in-russian-military-strategy-2/ (accessed March 14, 2025).

371 Gregory Weaver, "The urgent imperative to maintain NATO's nuclear deterrence," *NATO Review* (September 29, 2023). https://www.nato.int/docu/review/articles/2023/09/29/the-urgent-imperative-to-maintain-natos-nuclear-deterrence/index.html. Accessed October 10, 2024.

"near abroad"). These factors are significant motivations for potentially launching a direct attack against NATO.

While the conflict between Russia and Ukraine is primarily a conventional war, it also has represented a significant nuclear crisis. As the aggressor, Russia possesses the world's largest nuclear arsenal, including a substantial stockpile of battlefield nuclear weapons. Since the onset of the war, the Kremlin has heavily relied on nuclear threats and signaling to intimidate the West and hinder military assistance to Ukraine, achieving some limited success.[372] Putin has shifted the paradigm by using nuclear weapons as tools of coercion to manipulate shared nuclear risks for intimidation and political leverage. He views nuclear threats as instruments of deterrence and psychological warfare, designed to pressure opponents without resorting to actual use.[373]

Recent changes to Russia's nuclear doctrine further illustrate this strategy, as well as the deliberate ambiguity around potential nuclear use.[374] These changes expand the scenarios in which Russia might resort to nuclear weapons, introducing greater ambiguity that allows Russian leadership to interpret when such scenarios might occur. From the outset of the invasion, it has been widely accepted that the most likely situation for Russia's limited nuclear use would be to avert an imminent military defeat or to break a stalemate in Ukraine.[375]

372 Heather Williams, Kelsey Hartigan, Lachlan MacKenzie, and Reja Younis, "Deter and Divide: Russia's Nuclear Rhetoric and Escalation Risks in Ukraine," Center for Strategic and International Studies. https://features.csis.org/deter-and-divide-russia-nuclear-rhetoric/. Accessed March 14, 2025.

373 Rishi Paul, "Bluff and bluster: Why Putin revised Russia's nuclear doctrine," European Leadership Network (November 25, 2024) https://europeanleadershipnetwork.org/commentary/bluff-and-bluster-why-putin-revised-russias-nuclear-doctrine/. Accessed March 14, 2025.

374 Anton Troianovski and Ivan Nechepurenko, "Putin Declares Changes to Russian Nuclear Doctrine," *The New York Times* (September 25, 2024). https://www.nytimes.com/2024/09/25/world/europe/putin-russia-nuclear-doctrine.html

375 Jim Sciutto, "Exclusive: US prepared 'rigorously' for potential Russian nuclear strike in Ukraine in late 2022, officials say," *CNN* (March 9, 2024). https://www.cnn.com/2024/03/09/politics/us-prepared-rigorously-potential-russian-nuclear-strike-ukraine/index.html. Accessed March 14, 2025.

Moreover, reconstituted Russian conventional forces,[376] although not as strong as fully reinforced NATO forces, maintain a significant advantage in terms of space and time against NATO states located on Russia's periphery. This advantage could allow them to occupy the territory of these states in a fait accompli before NATO forces can effectively mobilize for defense. In such a scenario, Russia might threaten limited nuclear escalation to deter or defeat any NATO counteroffensive aimed at restoring the territorial status quo. Additionally, Russia continues to enhance its capabilities in space, cyber warfare, and conventional deep precision strikes, aiming to deny NATO forces critical support and leverage coercive power through threats to NATO's essential infrastructure.

China's ambiguous strategic intentions is another factor. Whether China is pursuing nuclear parity with or superiority over the United States is unclear.[377] While the United States is not clear about the end game, and where China will stop, experts do have a pretty good idea about the key motivations for their unprecedented campaign of nuclear expansion and modernization:[378] Beijing seeks to reinforce mutual vulnerability with the United States, and they want to escape

376 For a discussion on the prospects of reconstitutions, see Andrew Michta, "NATO-Russia Dynamics: Prospects for Reconstitution of Russian Military Power, A View From The Eastern Flank," The Atlantic Council (September 18, 2024) https://www.atlanticcouncil.org/wp-content/uploads/2024/09/2024.09.18-NATO-Russia-Dynamics-Report_EUCOM-RSI.pdf. Accessed March 14, 2025.

377 Radzinsky posits that most of Chinese thinkers do not see numerical parity as an important objective for China's nuclear forces. Some have emphasized instead technological parity, the ability to credibly manage nuclear escalation, and maintaining a small but streamlined nuclear force. Others emphasize mutual vulnerability and strategic stability. Advocates for a much larger Chinese arsenal also reject the concept of parity, emphasizing the importance of showcasing national power. As a result, he argues that the United States should not view numerical parity as a salient threshold for China. Depending on which communities gain influence in the Chinese nuclear debate, the United States should be prepared for a wider range of outcomes, from Chinese qualitative parity to outright numerical superiority. See Brian Radzinsky, "Chinese Views of the Changing Nuclear Balance," War on the Rocks (October 22, 2021). https://warontherocks.com/2021/10/chinese-views-of-the-changing-nuclear-balance/. Accessed January 5, 2025.

378 For an in-depth discussion on the factors driving China to change the size, structure, and operational posture of its nuclear forces, see David Logan and Phillip Saunders, "Discerning the Drivers of China's Nuclear Force Development: Models, Indicators, and Data," *China Strategic Perspectives* Vol. 18 (Washington, DC: National Defense University Press, July 26, 2023). https://ndupress.ndu.edu/Portals/68/Documents/stratperspective/china/chinaPerspectives-18.pdf?ver=vfq7ubtJyhPAKNAaO21jkQ%3d%3d. Accessed January 5, 2025.

from what they believe is U.S. nuclear bullying and coercion.[379] However, it remains unclear as to why Chinese leadership may have decided to change the role of nuclear weapons in its national security strategy by adopting an expanded theater nuclear war-fighting role and/or a counterforce role against U.S. nuclear forces backed by national missile defenses. According to Weaver, "the force that China is building is not necessary to enable its traditional minimum deterrence/ "no-first-use" strategy."[380] They have not officially abandoned their no-first-use policy and have not used nuclear coercion (instead PRC officials like to say that the United States is the bully), but the expectation is that this might also change and we might see more coercive threats with a direct/indirect reference to their more capable nuclear arsenal.

China is also closely observing the Ukraine War, drawing lessons that could shape its approach to Taiwan. While some posit that the conflict has maybe diminished Beijing's confidence in executing a swift and easy invasion,[381] others note that it has likely provided valuable insights into the strategic use of nuclear coercion.[382] By studying how nuclear threats can deter external intervention and create leverage for regional gains, China may seek to refine its own strategies for asserting dominance in the Indo-Pacific while managing the risks of escalation. Some argue that President Xi Jinping has demonstrated China to be a "responsible nuclear weapon state," citing his statements with Scholz condemning any use of nuclear weapons as unacceptable and his potential role in persuading Putin to refrain from using nuclear

379 Brad Roberts, ed., *Taking Stock: U.S.–China Track 1.5 Nuclear Dialogue*, CGSR Occasional Papers (Livermore, CA: Center for Global Security Research, 2020), pp. 28, 48. https://cgsr.llnl.gov/sites/cgsr/files/2024-08/cgsr_us-china-paper.pdf. Accessed March 14, 2025.

380 Gregory Weaver and Amy Woolf, "Requirements for nuclear deterrence and arms control in a two-nuclear-peer environment," The Atlantic Council (February 2, 2024), p. 7. https://www.atlanticcouncil.org/wp-content/uploads/2024/02/Requirements-for-Nuclear-Deterrence-and-Arms-Control-in-a-Two-Nuclear-Peer-Environment-Weaver-and-Woolf.pdf. Accessed March 14, 2025. For more on the debate regarding China's "no-first-use" declaratory policy, see Nan Li, "China's Evolving Nuclear Strategy: Will China Drop 'No First Use?'" China Brief, Jamestown Foundation (January 12, 2018). https://jamestown.org/program/chinas-evolving-nuclearstrategy-will-china-drop-no-first-use/. Accessed January 5, 2025.

381 Paul K. Davis, "Potential Implications of the Russia–Ukraine War for Northeast Asia," Journal for Peace and Nuclear Disarmament 6, no. 1 (2023), pp. 112–122. https://doi.org/10.1080/25751654.2023.2178205. Accessed March 14, 2025.

382 Tobias Burgers and Scott N. Romaniuk, "China's Real Takeaway from the War in Ukraine: Grey Zone Conflict is Best," *The Diplomat* (October 6, 2022). https://thediplomat.com/2022/10/chinas-real-takeaway-from-the-war-in-ukraine-grey-zone-conflict-is-best/. Accessed March 14, 2025.

weapons in Ukraine. However, as Culver and Kirchberger have noted, Beijing's strategic assumptions have likely not changed, and the United States and its allies and partners "should assume that China would be at least as determined as Russia to wield its rapidly expanding nuclear-capable forces (and space/counterspace and cyber capabilities) to deter direct U.S. intervention."[383] According to Fravel, China might be considering more uses for its rapidly expanding nuclear force, to include using nuclear threats to deter U.S. intervention in a Taiwan conflict.[384] Whereas in the past, PLA writings on nuclear signaling have focused on how to deter nuclear attacks against China, especially a first strike, as well as conventional attacks on strategic targets,[385] this may be changing. According to Fravel, as one PLA researcher observed, Russia "sent high-profile nuclear deterrent signals" that "deterred [*shezhi*] NATO from direct military intervention."[386]

Nevertheless, Putin's threats have had clear limits[387] that Beijing is also surely taking note of. One potential lesson learned from the limits of Russia's implicit use of nuclear threats is that it may be in China's interest to add, as von Hippel notes, "further ambiguity and uncertainty to the interpretation and application of China's No First Nuclear Use policy in potential conflict situations, including those involving Taiwan."[388] Zhao also emphasizes that Beijing could adapt Russian nuclear signaling approaches in order to leave "'wiggle room' for China to maximize the coercive

383 John K. Culver and Sarah Kirchberger, "US-China lessons from Ukraine: Fueling more dangerous Taiwan tensions," The Atlantic Council (June 15, 2023). https://www.atlanticcouncil.org/in-depth-research-reports/report/us-china-lessons-from-ukraine/. Accessed March 14, 2025.

384 M. Taylor Fravel, "China's Potential Lessons from Ukraine for Conflict over Taiwan," *The Washington Quarterly* 46, no. 3 (Fall 2023), p. 16. https://doi.org/10.1080/01636360X.2023.2260141. Accessed March 14, 2025.

385 For more information, refer to Fiona Cunningham and M. Taylor Fravel, "Assuring Assured Retaliation: China's Nuclear Strategy and U.S.-China Strategic Stability," International Security 40, no. 2 (2015), pp. 7-50. https://doi.org/10.1162/ISEC_a_00215. Accessed March 15, 2025.

386 M. Taylor Fravel, "China's Potential Lessons from Ukraine for Conflict over Taiwan," *The Washington Quarterly* 46:3 (Fall 2023), p. 16.

387 For example, Putin's threats failed to deter significant increases in weapons shipments and other kinds of support, especially in 2023.

388 David von Hippel. "Implications of the 2022–2023 Situation in Ukraine for Possible Nuclear Weapons Use in Northeast Asia," *Journal for Peace and Nuclear Disarmament* 6, no. 1, pp. 87–100. https://doi.org/10.1080/25751654.2023.2201367. Accessed March 17, 2025.

leverage of nuclear weapons without violating the letter of its NFU pledge."[389] Beijing's nuclear risk-taking and nuclear coercion playbook is likely still being written. As the war in Ukraine continues, Beijing will likely draw further conclusions that will have implications for a future Taiwan scenario, as well as the security of the United States and its allies.

"Fellow Travelers:" An Emboldened North Korea and Iran

The third tectonic shift is the evolving challenges posed by North Korea and Iran. North Korea has also established a playbook for achieving its strategic goals. For the Kim Jong Un regime, nuclear weapons are the only way to ensure its long-term survival and act as a means to gain an advantage in the competition for pan-Korean legitimacy against the ROK.[390] Because of this, Kim Jong Un has made it clear that he remains committed to expanding the country's nuclear weapon arsenal and posture.[391] North Korea has the capability to produce plutonium and highly enriched uranium, and continues to increase the stockpile of these materials to support its nuclear weapons program, estimated to consist of 30 or more nuclear warheads.[392] In early 2021, Kim Jong Un laid out a five-year defense plan that emphasized developing tactical nuclear weapons with various yields.[393] Additionally, North Korea remains aggressive in conducting missile launches and military demonstrations, including a successful space launch vehicle in 2023.

389 Tong Zhao, "Implications of Russia's Nuclear Signaling During the Ukraine War for China's Nuclear Policy," *NAPSNet Policy Forum* (October 13, 2022). https://nautilus.org/napsnet/napsnet-policy-forum/implications-of-russias-nuclear-signaling-during-the-ukraine-war-for-chinas-nuclear-policy/. Accessed March 17, 2025.

390 Sung-Yoon Lee, "North Korea's Diplomatic Gambit: Will History Repeat Itself?" Testimony at the Subcommittee on Asia and the Pacific, Foreign Affairs Committee, U.S. House of Representatives (Washington DC, April 11, 2018). https://docs.house.gov/meetings/FA/FA05/20180411/108116/HHRG-115-FA05-Wstate-LeeS-20180411-U1.pdf. Accessed March 17, 2025.

391 Office of the Director of National Intelligence, *Annual Threat Assessment of the U.S. Intelligence Community* (February 6, 2023), p. 21.

392 This estimate was as of January 2023. See Hans M. Kristensen and Matt Korda, "Chapter 7: World Nuclear Forces," in *Stockholm International Peace Research Institute (SIPRI) Yearbook 2023* (2023), p. 248, https://www.sipri.org/sites/default/files/YB23%2007%20WNF.pdf (accessed March 14, 2025; U.S. Defense Intelligence Agency, *Nuclear Challenges: The Growing Capabilities of Strategic Competitors and Regional Rivals* (October 2024), p. ix.

393 U.S. Defence Intelligence Agency, *Nuclear Challenges: The Growing Capabilities of Strategic Competitors and Regional Rivals* (October 2024), p. ix.

Meanwhile, the country has "raised military tensions with South Korea to an unprecedentedly high level"[394] and, in at least some analysts' view, has made a strategic decision to go to war.[395] North Korea has matured its operational capabilities, and may be able to strike all of the continental United States, as well as targets on the Korean Peninsula, Japan, and elsewhere in the region. North Korea's non-nuclear capabilities to conduct limited surprise attacks against South Korea continue to advance, as evidenced by its tests of more capable short-range solid-propellant missiles and its drone excursions. North Korea's growing tactical nuclear capabilities also provide Pyongyang with a broader range of options to threaten South Korea with nuclear attacks at a threshold it may calculate would not automatically provoke a massive U.S. nuclear retaliation. As Kwon has observed, this means that the "alliance must cope with the possibility of North Korea using tactical nuclear weapons in order to achieve military or political objectives without triggering American nuclear retaliation."[396]

Currently, Iran has been approaching the threshold of acquiring nuclear weapons, and most experts now believe that it could develop this capacity in just a few weeks if its political leadership decided to proceed.[397] Iran is "pressing the gas pedal" in enriching uranium to near weapons-grade,[398] having enriched its uranium

394 Bong-geun Jun, "North Korea Has Lost the 'Unification Competition'" U.S. Institute for Peace (February 1, 2024). https://www.usip.org/publications/2024/02/north-korea-has-lost-unification-competition. Accessed March 17, 2025.

395 Robert L. Carlin and Sigfried S. Hecker, "Is Kim Jong Un Preparing for War?" 38 North (January 11, 2024). https://www.38north.org/2024/01/is-kim-jong-un-preparing-for-war/ (accessed March 17, 2025); also see National Defense Strategy Commission, *Report of the Commission on the National Defense Strategy* (July 29, 2024), p. 9.

396 Jung Jae Kwon, "How to Enhance South Korea's Conventional Deterrent," War on the Rocks (September 1, 2023). https://warontherocks.com/2023/09/how-to-enhance-south-koreas-conventional-deterrent/#:~:text=alliance%20now%20has%20to%20cope%20with%20the%20possibility%20of%20North%20Korea%20using%20tactical%20nuclear%20weapons%20in%20order%20to%20achieve%20military%20or%20political%20objectives%20without%20triggering%20American%20nuclear%20retaliation. Accessed March 17, 2025.

397 Michael Eisenstadt, "Iran's Nuclear Hedging Strategy: Shaping the Islamic Republic's Proliferation Calculus," Policy Focus 178 (Washington, DC: Washington Institute for Near East Policy, November 29, 2022). https://www.washingtoninstitute.org/policy-analysis/irans-nuclear-hedging-strategy-shaping-islamic-republics-proliferation-calculus. Accessed March 17, 2025.

398 Leela de Kretser, Iran is 'pressing the gas pedal' on uranium enrichment, IAEA chief says, Reuters (January 22, 2025). https://www.reuters.com/world/middle-east/iran-has-about-200-kg-uranium-enriched-near-bomb-grade-grossi-says-2025-01-22/. Accessed March 17, 2025.

up to 83.7%, a level that has no civilian application.[399] According to the DIA, since 2019, Iran has exceeded several of the JCPOA's limits, including the limits on the quantity and enrichment levels of its uranium stockpile, the locations where Iran enriches uranium, the number and types of enriching centrifuges, and the research and development with uranium metal. There is a growing concern that the complete collapse of the JCPOA and the advancement of the Iranian nuclear program may lead Iran to either violate its nonproliferation pledge under the NPT or withdraw from the treaty, resulting in significant regional and global consequences.

Additionally, Tehran continues to develop ballistic missile systems to increase their accuracy and lethality. In 2024, the DIA reported that Iran possesses the largest missile force in the Middle East, capable of striking targets up to 2,000 kilometers from its borders.[400] However, satellite images indicate that as of October 2024, Israel has significantly degraded Tehran's air defense and missile production capabilities.[401]

The Old, The New, The Bad, The Ugly: Cooperation Among U.S. Adversaries

The fourth tectonic shift is the growing partnerships between China, Russia, North Korea, and Iran. Considering these rough alliances, the United States will likely need to rethink its extended nuclear deterrence practices. Cooperation between Russia, which is modernizing its strategic and theater nuclear forces, and China, which is significantly expanding its once-small arsenal, tests the credibility of the U.S. extended nuclear deterrent. This challenge is compounded by North Korea's expanding nuclear capabilities and Iran's potential weapons development. These nations are working in coordination to threaten U.S. and allied interests, as

399 Stephanie Liechenstein, "UN report: Uranium particles enriched to 83.7% found in Iran," AP News (February 28, 2023).

400 U.S. Defense Intelligence Agency, *Nuclear Challenges: The Growing Capabilities of Strategic Competitors and Regional Rivals* (October 2024), p. x.

401 On October 26, 2024, Israel conducted retaliatory strikes against Iran, striking missile-production sites around Tehran, including the Parchin military complex, the Khojir military base, the Shahrud missile site, and a factory in the Shamsabad Industrial Zone. Kian Sharifi, "Israel's Attack on Iran Has Left Tehran Offensively and Defensively Weaker," *Radio Free Europe Radio Liberty* (November 1, 2024). https://www.rferl.org/a/iran-israel-missile-production-air-defenses/33183370.html. Accessed December 13, 2024.

evident by Russia and DPRK in the Ukraine War. Sometimes referred to as the "axis of adversaries,"[402] their current cooperation deserves attention.

It is crucial for the United States and its allies to understand the spectrum of alignment among these adversaries to assess their strategic significance and identify opportunities to exploit any fissures or limitations in their relationships. Table 4 examines potential types of alignment. Where we land on this spectrum will have implications for extended nuclear deterrence and assurance requirements. It may necessitate adjustments to the size and structure of U.S. nuclear forces to ensure credible deterrence across multiple theaters simultaneously. This may require the United States to reassess its nuclear posture by potentially expanding the size of its nuclear arsenal, diversifying delivery platforms, and/or adapting its force structure to address the unique threats posed by these coalitions. Such adjustments should account for the possibility of regional nuclear escalation scenarios or coordinated aggression designed to challenge U.S. extended deterrence commitments.

402 Raphael S. Cohen, "Call the Axis of Adversaries Whatever You Want, But Take It Seriously," RAND Corporation (December 5, 2024), https://www.rand.org/pubs/commentary/2024/12/call-the-axis-of-adversaries-whatever-you-want-but-take-it.html (accessed December 13, 2024); Lawrence Freedman, "The rise of a new axis," *The New Statesman* (June 6, 2024), https://www.newstatesman.com/international-politics/2024/06/rise-of-new-axis-china-russia-iran-north-korea (accessed December 13, 2024).

Table 4. Framing The Potential Types of Alignments

Type of Alignment	Description
Hostile Rivalry	Competitive relationship characterized by animosity, aggression, and conflict between two or more countries, often leading to confrontational actions, tensions, and a lack of cooperation.
Strategic Partnership	Collaborative partnerships formed to counterbalance U.S. influence or to achieve mutual goals, encompassing various areas such as economic, political, and military cooperation.
Formal Military Alliance	Structured agreement between sovereign states to cooperate in defense and military operations, typically involving mutual defense commitments, coordinated strategies, and shared resources.
Covert Alliances	Secretive or hidden collaborations aimed at undermining common adversaries, including the United States. Such alliances are often formed to achieve specific goals while maintaining discretion, typically to avoid scrutiny, backlash, or to operate in a manner that would be unacceptable if made public.
Opportunistic Alliance	Temporary alliances based on shared interests, despite underlying tensions. These tend to be more transactional and seek to capitalize on specific opportunities or advantages, often driven by mutual benefit rather than long-term commitment or shared values.
Neutral Stance	Non-alignment or passive observation among adversaries without direct conflict.
Competitive Cooperation	Situations where adversaries may cooperate in certain areas while competing in others.

The cooperation among the four U.S. adversaries has primarily been bilateral, driven by a shared threat perception of the United States and opposition to the U.S.-led regional and global orders.

Russia-China. The analytical community has been closely watching the Russia and China "friendship without limits," highlighting its growing strength and the implications for Western strategic interests. Xi and Putin share the desire for a multipolar world—one that ends the U.S.-led regional and global order. The convergence of these objectives is the foundation for the China-Russia alliance. As Fraser notes, Russia and China are collectively striving towards the formation

of a bloc that is set to rival Western hegemony.[403] Based on the typology outlined above, Russia and China can be characterized as a "strategic partnership," which will likely grow deeper in the near-term, but has limitations. Historical animosities, deep cultural differences, and power asymmetry would likely hinder a formal military alliance.[404]

However, as Bekkevold argues, despite historical mutual mistrust and potential discomfort over dependencies, the current Beijing-Moscow axis is stronger than the Cold War-era Sino-Soviet alliance across five key factors: geopolitics, economics, ideology, leadership, and institutional links.[405] For example, since Russia's 2022 invasion of Ukraine, China has provided crucial economic and technological support to Russia, intensifying their alignment.[406] Still, there are several limitations and areas vulnerable to potential fissures. Fraser concludes that while Russia characterizes its relationship with China as an alliance between two great civilizations, Moscow is increasingly finding itself a pawn of China's geopolitical aspirations, suggesting there are limits to this alliance.[407] Mastro notes their military alignment is primarily aimed at supporting China's challenge to U.S. hegemony in Asia and does not include China helping Russia take on the United States in Europe. Mastro posits that because Russian support is characterized by enhancing China's independent combat capabilities and potentially offering support functions during wartime, Russia will likely provide equipment, intelligence, and critical war material if China goes to war over Taiwan.[408]

403 Callum Fraser, "Russia and China: The True Nature of their Cooperation," Royal United Services Institute for Defence and Security Studies (June 7, 2024). https://www.rusi.org/explore-our-research/publications/commentary/russia-and-china-true-nature-their-cooperation. Accessed December 13, 2024.

404 "Together and Apart: The Conundrum of the China-Russia Partnership," Asia Society Policy Institute (October 2023). https://asiasociety.org/policy-institute/together-and-apart-conundrum-china-russia-partnership. Accessed December 13, 2024.

405 Jo Inge Bekkevold, "The Beijing-Moscow Axis Is Much Stronger This Time Around," *Foreign Policy* (October 8, 2024). https://foreignpolicy.com/2024/10/08/russia-china-axis-alliance-xi-putin-geopolitics/. Accessed December 13, 2024.

406 *Ibid.*

407 Callum Fraser, "Russia and China: The True Nature of their Cooperation," Royal United Services Institute for Defence and Security Studies (June 7, 2024).

408 Oriana Skylar Mastro, "Sino-Russian Military Alignment and Its Implications for Global Security," *Security Studies* 33, no. 2 (2024), pp. 254–90. https://doi.org/10.1080/09636412.2024.2319587. Accessed March 17, 2025.

Russia-DPRK. After Russia invaded Ukraine in 2022, cooperation between Moscow and Pyongyang grew to unprecedented heights[409] with North Korea supplying weapons and personnel to support Russia in the conflict.[410] Because of these events, today, the Russia-DPRK relationship can be characterized as an "opportunistic alliance with military alliance characteristics". As Cha noted, "this is the real 'no-limits partnership.' We are entering a new era if North Korean soldiers are dying for Putin. This will increase the leverage Kim has when making demands, and Putin is likely to acquiesce to those demands."[411] With the signing of their 2024 mutual defense treaty, which agrees to defend each other in case of attack, this alliance appears to be a longstanding commitment.[412] However, most notably, the 2024 treaty serves very near-term opportunistic purposes for both Moscow and Pyongyang. In the near term, it serves as a political messaging tool—a warning to South Korea and Japan to prevent deeper military engagement with Ukraine. The recent signing of the treaty has also reestablished Russia as a key security player in Northeast Asia, mirroring the influence once held by the former Soviet Union. The implications of this treaty will be discussed in further detail in Chapter 6.

Russia-Iran. Since the war in Ukraine, cooperation between Moscow and Tehran has expanded to include Iran supplying drones, missiles, and munitions to Russia,

409 John Park, "The North Korea-Russia relationship is blossoming into a common market of autocracies," Atlantic Council (October 25, 2024). https://www.atlanticcouncil.org/blogs/new-atlanticist/north-korea-russia-common-market-of-autocracies/. Accessed October 23, 2024.

410 Jim Garamone, "Austin Confirms North Korea Has Sent Troops to Russia," DOD News (October 23, 2024). https://www.defense.gov/News/News-Stories/Article/Article/3943880/austin-confirms-north-korea-has-sent-troops-to-russia/. Accessed October 23, 2024.

411 Victor Cha is quoted in Erik Schmitt, David Sanger, Anatoly Kurmanaev, "U.S. Says North Korean Troops Are in Russia to Aid Fight Against Ukraine," *The New York Times* (October 23, 2024). https://www.nytimes.com/2024/10/23/us/politics/north-korea-russia-military-ukraine.html. Accessed October 23, 2024.

412 While the Alliance appears to have some longevity, Moscow and Pyongyang have a history of signing and adapting treaties, which are altered based on the strategic context. For example, the 2000 "Treaty of Friendship, Good-Neighborly Relations and Cooperation," which replaced the 1961 security treaty between the Soviet Union and North Korea, omitted any clause on mutual military assistance.

alongside existing collaboration in electronic warfare,[413] space,[414] and cyberspace.[415] While both share animosity toward the United States and a desire to reduce its military presence in the Middle East, it appears to be an "opportunistic alliance" with limitations. Most recently, the two countries have formalized their ties with the January 2025 signing of their strategic partnership agreement. While military cooperation remains a significant aspect of the Russian Iranian relationship, the treaty does not indicate any progress toward establishing a mutual defense arrangement. Still, the new treaty requires both sides to exchange information, conduct joint military exercises, and "ensure regional security."[416] As Notte and Lamson argue, the relationship between Tehran and Moscow is more than transactional, and it does not constitute a military alliance. There are several constraints, including Russia's interest in maintaining good relations with Gulf states, which will likely hinder a full-fledged alliance between Iran and Russia.[417]

China-DPRK. Despite fluctuations in their relationship, China has consistently upheld this alliance, which may be most closely characterized as a "strategic partnership with opportunistic alliance tendencies." The relationship between Pyongyang and Beijing is defined by China's efforts to manage risks in North Korea to avoid a potential crisis that could impact its own stability, coupled with ongoing economic

413 For example, Notte and Lamson highlight that Russia has assisted Iran in developing GPS denial and jamming capabilities by sharing insights gained from its own electronic warfare operations in Syria. See Hanna Notte and Jim Lamson, "Iran-Russia Defense Cooperation: Current Realities and Future Horizons," James Martin Center for Nonproliferation Studies (August 2024). https://nonproliferation.org/wp-content/uploads/2024/08/op61-RSI_Russia-Iran_Notte-Lamson_CNS-Occasional-Paper.pdf. Accessed October 8, 2024.

414 Emil Avdaliani, "Iran-Russia Space Cooperation Deepens as Pezeshkian Visits Moscow," Stimson Center (January 16, 2025). https://www.stimson.org/2025/iran-russia-space-cooperation-deepens-as-pezeshkian-visits-moscow/. Accessed January 18, 2025.

415 Omree Wechsler, "The Iran-Russia Cyber Agreement and U.S. Strategy in the Middle East," Council on Foreign Relations (March 15, 2021). https://www.cfr.org/blog/iran-russia-cyber-agreement-and-us-strategy-middle-east. Accessed March 16, 2025.

416 For a more detailed discussion on the limits of this treaty, see Nikita Smagin, "New Russia-Iran Treaty Reveals the Limits of Their Partnership," Carnegie Endowment for International Peace (January 21, 2025). https://carnegieendowment.org/russia-eurasia/politika/2025/01/russia-iran-strategic-agreement?lang=en. Accessed March 13, 2025.

417 Hanna Notte and Jim Lamson, "Iran-Russia Defense Cooperation: Current Realities and Future Horizons," James Martin Center for Nonproliferation Studies (August 2024).

support to Pyongyang.[418] China retains its unique security treaty with North Korea, a bond deeply rooted in shared history and described by President Xi Jinping as "bonded by blood." Beijing perceives the unification of Korea—especially under an alliance with the United States and Japan—as a strategic threat, making the survival of North Korea's regime essential to its own security interests. As Garlauskas and Gilbert observe, Beijing is an enabler of North Korea's aggression, may encourage Pyongyang to open a "second front" in Korea in the event of U.S.-China war,[419] which could present opportunities for Beijing to complicate the United States and its allies' strategic calculations.

China-Iran. Tehran and Beijing's collaboration centers on economic trade, particularly in energy, with limited security cooperation. China sees its relationship with Iran as a means to strengthen its influence in the Middle East and secure energy supplies. However, as Chivvis and Keating outline, Beijing's economic relations with Tehran are "less important than those with the Gulf States that are Iran's adversaries." They further note that "Beijing will avoid tilting too deeply in Tehran's direction in order to ensure this balance in its energy supplies."[420] Because of this, the relationship between the two appears to be characterized as "competitive cooperation with opportunistic alliance tendencies." In March 2021, Beijing and Tehran signed a 25-year strategic partnership agreement, but this agreement has not achieved much, and trade between the two countries declined in subsequent years.[421] Moreover, China's security ties with Iran remain very limited, with minimal military collaboration under the 2021 Strategic Partnership Plan, including low-value joint drills and no significant arms purchases since 2020. While

418 Christopher Chivvis and Jack Keating, "Cooperation Between China, Iran, North Korea, and Russia: Current and Potential Future Threats to America," Carnegie Endowment for International Peace (October 8, 2024). https://carnegieendowment.org/research/2024/10/cooperation-between-china-iran-north-korea-and-russia-current-and-potential-future-threats-to-america?lang=en. Accessed October 10, 2024.

419 Markus Garlauskas and Lauren D. Gilbert, "A US-South Korea alliance strategic memo on deterrence," Issue Brief, Atlantic Council (January 31, 2024). https://www.atlanticcouncil.org/in-depth-research-reports/issue-brief/a-us-south-korea-alliance-strategic-memo-on-deterrence/. Accessed March 19, 2025.

420 Christopher Chivvis and Jack Keating, "Cooperation Between China, Iran, North Korea, and Russia: Current and Potential Future Threats to America," Carnegie Endowment for International Peace (October 8, 2024).

421 "Iran-China trade reaches $14.6b in 2023," *Tehran Times* (January 27, 2024). https://www.tehrantimes.com/news/494181/Iran-China-trade-reaches-14-6b-in-2023. Accessed October 10, 2024.

China has provided commercial drones used by Iran's proxies[422] and reportedly rocket fuel precursor chemicals for Tehran's missile program,[423] these actions lack deeper strategic alignment. China opposes Iran acquiring nuclear weapons and supported the 2015 nuclear deal and continues to call for all parties to return to it.[424] Moreover, there are some reports that Beijing has pressured Tehran to return to the negotiating table no matter what.[425]

Iran-DPRK. The partnership between Iran and North Korea is reminiscent of a "neutral stance with some opportunistic characteristics." Neither country is well-positioned to assist the other. It is the weakest among the six examined bilateral alliances and it is primarily driven by shared hostility toward the United States. Despite Pyongyang and Tehran's collaboration on defense technology, particularly ballistic missiles, and limited arms sales (e.g., North Korean weapons used by Iran's proxies like Hamas and the Houthis), their strategic relationship is constrained by diplomatic isolation, heavy sanctions, economic weakness, and geographic separation.

The Old, The New, The Bad, The Ugly: Implications for Extended Nuclear Deterrence

Extending deterrence effectively is vital to keep nuclear-armed adversaries like Russia, China, and North Korea from attacking U.S. allies. This has been a core

422 U.S. Department of Defense, *Military and Security Developments Involving the People's Republic of China, 2024, Annual Report to Congress*, Office of the Secretary of Defense (2024), p. 16; Fatima Abo Alasrar, "How China turned the Red Sea into a strategic trap for the US," The Atlantic Council (May 5, 2025), https://www.atlanticcouncil.org/blogs/menasource/how-china-turned-the-red-sea-into-a-strategic-trap-for-the-us/ (accessed May 5, 2025).

423 Saskya Vandoorne, Gianluca Mezzofiore, Simone McCarthy and Yong Xiong, "Iran is rearming its missile program and a ship of supplies just arrived from China, Western sources say," CNN (February 13, 2025). https://www.cnn.com/2025/02/13/middleeast/iran-is-rearming-its-missile-program-and-a-ship-of-supplies-just-arrived-from-china-western-sources-say, Accessed March 5, 2025.

424 Alexandra Sharp, "China, Russia, and Iran Hold Nuclear Talks," *Foreign Policy* (March 14, 2025). https://foreignpolicy.com/2025/03/14/china-russia-iran-nuclear-talks-us-sanctions-trump/ (accessed March 17, 2025); Jacopo Scita, "Can China Be the JCPOA's Last Hope?" *The Diplomat* (February 24, 2023). https://thediplomat.com/2023/02/can-china-be-the-jcpoas-last-hope/. Accessed October 10, 2024.

425 Guy Burton, "Neither China nor Iran Will Get What They Want from Their Relationship." *The Diplomat* (February 18, 2023). https://thediplomat.com/2023/02/neither-china-nor-iran-will-get-what-they-want-from-their-relationship/. Accessed October 10, 2024.

challenge since the nuclear era began. If deterrence fails and a crisis or conflict emerges in one theater, it becomes necessary to address how to prevent nuclear-armed adversaries from exploiting the situation and acting aggressively in a second theater, adding an additional layer of complexity and risk. If deterrence collapses in both theaters, we will then face the formidable and daunting task of simultaneously fighting two wars while attempting to restore deterrence—in a world where the current U.S. force is not designed to fight two major wars, both Europe and Asia rely on the same set of strategic nuclear forces, and U.S. resources are finite, there likely will be tensions in resource allocations and an increased need for U.S. and allied integration. As the 2023 Strategic Posture Commission noted, "allies repeatedly stressed that the worsening threat environment requires closer and stronger cooperation with the United States because the consequences of deterrence failure are so severe, and for some Allies, existential."[426] This is a new challenge that underscores the complexities of multipolar geopolitics and the increasing interdependencies between regions.

The primary concern is that nuclear adversaries are leveraging and exploiting their regional nuclear capabilities to challenge our allies. They are also fielding capabilities that can exacerbate the U.S. nuclear force challenge. The United States and its allies are facing three adversaries that can strategically escalate, requiring the United States to think about the entire continuum of conflict when it comes to regional deterrence challenges and our allies. Failing to address this problem has the potential to undermine deterrence, especially deterrence of opportunistic aggression in a second theater and/or collaborative Russian, Chinese, and/or North Korean aggression in Europe and Asia simultaneously.

With these developments in mind, the United States and its allies will face multiple simultaneous deterrence challenges. This means there will be a range of scenarios in the coming decade that the United States and its allies will need to be prepared to respond to. These scenarios span the spectrum of conflict and will

426 The Strategic Posture Commission also concluded that "the U.S. and allied conventional military advantages in Asia are decreasing at the same time the potential for two simultaneous theater conflicts is increasing. Moreover, the U.S. conventional forces needed to fight a theater conflict in Europe differ from those required for Asia. The currently planned force is not structured to be able to fully reinforce both theaters simultaneously – especially given the growing adversary non-nuclear capability to hinder U.S. ability to flow additional forces to Asia or Europe. This shortfall, combined with increases in China's nuclear capabilities, has the potential to undermine deterrence, especially deterrence of opportunistic aggression." See Congressional Commission on the Strategic Posture of the United States, *America's Strategic Posture, Final Report* (October 2023), pp. 76, 90-91.

require increasingly complex joint planning. Moreover, the risks of adversary nuclear use in both regional and global contexts have increased.

Table 5 illustrates how the requirements, goals, and focus of extended nuclear deterrence shift based on the theater and the state of conflict, highlighting the complexity of managing deterrence in different scenarios.

Table 5. Requirements for Extended Nuclear Deterrence Across the Spectrum of Conflict 1.0[427]

	Peacetime	Crisis	Conflict
Indo-Pacific Theater	**Goals:** Promote stability and economic cooperation among regional allies and deter aggression from adversaries. **Requirements:** Focus on diplomatic engagement and maintaining a military presence and ensuring robust deterrence capabilities. Improve allies'/partners' conventional capabilities, augment U.S. theater nuclear forces. **Focus:** Building alliances to counterbalance potential threats.	**Goals:** Aim for de-escalation and provide assurance to allies. **Requirements:** Enhance military readiness and force survivability. Reinforce and establish clear communication channels. **Focus:** Effective crisis management to prevent escalation.	**Goals:** Defend allies, restore deterrence at the lowest possible damage, and terminate the conflict on favorable terms. **Requirements:** Prepare for rapid military response and ensure effective use of capabilities for escalation management and war termination. **Focus:** Coordinate military operations among allies, focusing on escalation management, seeking off-ramps, and terminating the conflict.
European Theater	**Goals:** Ensure stability and collective defense among member states. **Requirements:** Foster diplomatic engagement and maintain NATO cohesion. Improve European NATO allies' conventional forces, augment U.S. theater nuclear forces. **Focus:** Promote political unity to deter potential threats.	**Goals:** Strengthen deterrence and provide assurance to allies. **Requirements:** Increase military readiness and survivability, including mobilization, and enhance intelligence sharing. **Focus:** Develop effective crisis response strategies.	**Goals:** Defend European territories, restore deterrence at the lowest possible damage, and terminate the conflict on favorable terms. **Requirements:** Prepare for rapid response using full military capabilities and ensuring strategic coordination. **Focus:** Execute joint military operations effectively, seeking to terminate the conflict.

Sometimes the two-peer problem is broken down as the challenge of deterring aggression in the second theater if the U.S. finds itself at war with a major power rival in the other theater. But that is by no means the only scenario for this evolving

427 In Tables 5 and 6, "requirements" refer to what must be done or prepared, "goals" refer to the desired outcomes, and "focus" refers to strategic priorities.

problem. A significant amount of thought has been devoted to understanding various dynamics among adversaries, including conflicts between misaligned opponents, the opportunistic gains of non-aligned actors, the sequential emergence of crises, and the coordinated or aligned actions of adversaries that either stress or support one another's objectives.[428]

However, the Table 5 matrix is incomplete. The expanded matrix below (Table 6) attempts to capture a full spectrum of scenarios, illustrating how extended nuclear deterrence strategies must adapt to various states of conflict and peace across the Indo-Pacific and Europe. In the event of a crisis or conflict in one theater, it will be essential to take parallel steps in the second theater to avoid the risk of fighting a war on two fronts. For instance, while implementing measures to de-escalate tensions with Russia, it will be crucial to simultaneously signal and potentially enhance the readiness of forces in the other theater to deter China from initiating a second front. These two theaters are interconnected, and actions will be occurring concurrently in both.

428 Refer to Kayse Jansen, "New Strategic Deterrence Frameworks for Modern-Day Challenges," *Joint Force Quarterly* 112 (February 2024). https://ndupress.ndu.edu/Portals/68/Documents/jfq/jfq-112/jfq-112_60-69_Jansen.pdf?ver=JdM-sjuZqyhT0Vq6X9V49g%3d%3d. Accessed October 20, 2024.

Table 6. Requirements for Extended Nuclear Deterrence Across the Spectrum of Conflict 2.0

Scenario	Goals	Requirements	Focus
Peacetime in Both Theaters	Achieve long-term stability and prevent conflicts.	Maintain strong alliances and diplomatic engagement in both regions; Develop comprehensive operational plans that address simultaneous threats in both regions.	Foster economic cooperation and mutual interests among allies.
Crisis in Indo-Pacific, Peacetime in Europe	Deter adversaries from attacking and prevent escalation during crisis; Continue to assure allies in Europe.	Tailored regional deterrence in the Indo-Pacific while maintaining diplomatic engagement in Europe; Provide assurance to allies in both regions.	Utilize diplomatic channels to manage tensions.
Crisis in Europe, Peacetime in Indo-Pacific	Promote regional cooperation and deter aggression.	Enhanced communication and readiness in Europe while maintaining stability in the Indo-Pacific.	Leverage diplomatic efforts to manage the crisis in Europe.
War in Indo-Pacific, Crisis in Europe	Ensure defense of allies in both theaters; Win war quickly to deter adversaries in European theater.	Coordinated military response in the Indo-Pacific while addressing a crisis in Europe.	Joint military planning to address simultaneous threats.
War in Europe, Crisis in Indo-Pacific	Ensure defense of allies in both theaters; Win war quickly to deter adversaries in Indo-Pacific theater.	Rapid mobilization of forces in Europe while managing a crisis in the Indo-Pacific.	Strategic coordination to address multiple conflicts.
War in Both Theaters	Ensure total defense of allies and territories, and U.S. homeland.	Execute operational plans that address simultaneous threats in both regions.	Execute integrated operations to coordinate military efforts across theaters.

Still, both tables fail to recognize the nuanced relationships between the four U.S. adversaries. While counterbalancing the United States is a clear goal for all these alliances, their mutual objectives are limited in scope. These partnerships are overt, likely intended to send a message to the United States and instill fear or

deter actions. However, a lot of this cooperation appears conditional and temporary, raising questions about its longevity. For instance, the collaboration between North Korea and Russia may not be solely limited to the Ukraine War and could potentially extend beyond it. Chivvis and Keating argue that while uncertain, future cooperation could escalate, potentially undermining U.S. security interests through nuclear technology transfers to Iran and North Korea or enhanced military collaboration during future conflicts.[429] This is certainly a real possibility.

Implications for Extended Nuclear Deterrence and Assurance

The varying degrees of alignment among U.S. adversaries have significant implications for extended nuclear deterrence and assurance. First, these differing alignments require tailored deterrence strategies, as extended nuclear deterrence is highly context-specific and does not operate in a vacuum. A credible deterrent depends heavily on adversary force postures and the evolving strategic environment. While current capabilities may be sufficient, they could quickly become inadequate if adversaries deepen their alignment. Credibility in extended nuclear deterrence is not inherent; it hinges on the relative military balance and perceptions of political will, which are likely to grow more complex as adversarial alignments evolve.

Second, the United States and its allies must monitor signs of deepening cooperation and anticipate change. A lot of the academic literature dismisses a Russia-China alliance, calling it a "marriage of convenience"[430] or a "quasi-

429 For a brief overview of this cooperation see Christopher Chivvis and Jack Keating, "Cooperation Between China, Iran, North Korea, and Russia: Current and Potential Future Threats to America," Carnegie Endowment for International Peace (October 8, 2024).

430 Michał Lubina, *Russia and China: A Political Marriage of Convenience – Stable and Successful*. 1st ed. (Verlag Barbara Budrich, 2017). https://doi.org/10.2307/j.ctvdf0314. Accessed January 12, 2025.

alliance;"[431] however, these predictions could prove to be wrong.[432] Many analysts have consistently underestimated the degree of collaboration between these two nations. For instance, we did not anticipate that Russia would provide China with highly enriched uranium. The dynamics among our adversaries have shifted significantly and we have consistently gotten it wrong. In fact, the so-called "alliance of autocracies" appears to be coordinating more closely than we had expected. For example, Russia and China previously participated in the Six-Party Talks,[433] but now they are lifting sanctions against North Korea.[434] Moreover, it is increasingly hard to imagine a conflict on the Korean peninsula without Russian and Chinese involvement. Even without coordination, they can create significant challenges for the United States and its allies. While our understanding appears to be changing,[435] there is still substantial work to be done to better understand how these relationships are evolving. For example, Iran is gaining insights from these interactions as a nuclear threshold state, while U.S. allies in the Middle East, who may not be explicitly covered by the U.S. nuclear umbrella, are also observing closely—highlighting the far-reaching implications of this evolving dynamic.

Some argue that these relationships are far from a coherent bloc against the United States—that they share nothing like the military ties, diplomatic structure, and economic cooperation that existed among the Warsaw Pact countries during

431 Robert Blackwill and Richard Fontaine, "No Limits? The China-Russia Relationship and U.S. Foreign Policy," Council on Foreign Relations (December 2024). https://www.cfr.org/report/no-limits-china-russia-relationship-and-us-foreign-policy. Accessed January 12, 2025.

432 For example, some call it an autocratic bromance that is burgeoning. See Ryan Tully, "Russia's Alliance of Convenience with China Is a Ticking Time Bomb," *Kyiv Independent* (December 6, 2024), https://www.hudson.org/security-alliances/russias-alliance-convenience-china-ticking-time-bomb-ryan-tully (accessed December 10, 2024); "The Xi-Putin partnership is not a marriage of convenience: It is one of vital, long-term necessity," *The Economist* (May 14, 2024), https://www.economist.com/china/2024/05/14/the-xi-putin-partnership-is-not-a-marriage-of-convenience (accessed October 10, 2024).

433 Jayshree Bajoria and Beina Xu, "The Six Party Talks on North Korea's Nuclear Program," Council on Foreign Relations (last updated September 30, 2013). https://www.cfr.org/backgrounder/six-party-talks-north-koreas-nuclear-program. Accessed March 13, 2025.

434 Daniel DePetris, "Russia-DPRK Relations: Strategic Partnership or Opportunistic Alliance?" 38 North (October 25, 2024). https://www.38north.org/2024/10/russia-dprk-relations-strategic-partnership-or-opportunistic-alliance/. Accessed October 30, 2024.

435 "Together and Apart: The Conundrum of the China-Russia Partnership," Asia Society Policy Institute (October 2023).

the Cold War.[436] They don't enjoy the level of political, economic, diplomatic, and technological cooperation that exists between the United States and its allies and partners. Furthermore, actual military cooperation between Russia, China, Iran, and North Korea, has so far been largely restricted to support for Russia's war effort in Ukraine.[437] While these assessments may hold true today, the evolution of these relationships over the next decade will serve as a critical external factor shaping the future of U.S. extended nuclear deterrence and assurance. Neglecting to address these threats—merely because some deem them improbable—could paradoxically increase their likelihood. Moreover, failing to confront this issue risks exacerbating the challenges associated with maintaining extended nuclear deterrence and assuring our allies and partners.

Re-evaluating our Extended Nuclear Deterrence Assumptions in a Multipolar Environment

Given this context, it is essential to assess whether our extended nuclear deterrence is in order. The longstanding assumptions that have guided U.S. extended nuclear deterrence and assurance practices for decades are, in many ways, no longer valid in this new environment. The context has drastically changed. As noted by some analysts, the two-near-peer problem "casts a harsh bright light on the assumptions that have the guided the U.S. practice of extended nuclear deterrence for decades."[438] While our assumptions about extended nuclear deterrence have been shaped by longstanding factors, these are now further influenced by emerging realities. The discussion below outlines some of these

436 Christopher Chivvis and Jack Keating, "Cooperation Between China, Iran, North Korea, and Russia: Current and Potential Future Threats to America," Carnegie Endowment for International Peace (October 8, 2024).

437 For example, Pyongyang, which has provided Moscow with a multitude of artillery shells and ballistic missiles, is estimated to have shipped thousands of containers to Russia since Putin's summit with North Korean leader Kim Jong Un in September 2023. Pyongyang has also reportedly ramped up its defense industry's activity to supply Russia's invasion. See Can Kasapoğlu, "NATO Is Not Ready for War: Assessing the Military Balance between the Alliance and Russia," Hudson Institute (June 28, 2024). https://www.hudson.org/security-alliances/nato-not-ready-war-assessing-military-balance-between-alliance-russia-can-kasapoglu. Accessed October 24, 2024.

438 *China's Emergence as Second Nuclear Peer: Implications for U.S. Nuclear Deterrence Strategy, A Report of a Study Group Convened by The Center for Global Security Research at Lawrence Livermore National Laboratory* (Livermore, CA: Center for Global Security Research, 2023) p. 47.

changing assumptions. Given that many of our longstanding assumptions have changed, the United States will have some strategic choices to make.

Changing Assumptions for Extended Nuclear Deterrence in Europe

Assumption #1. Reliance on U.S. Strategic Nuclear Forces and Sharing Arrangements

In a two-nuclear-peer environment, the United States faces increased pressure to bolster its nuclear posture in both Europe and the Indo-Pacific. Facing two peer competitors simultaneously significantly impacts both U.S. strategic and theater nuclear force requirements. Strategically, the United States must ensure a credible deterrent against distinct adversaries, potentially requiring a larger, more flexible nuclear arsenal to address simultaneous threats. For theater nuclear forces, tailored regional deterrence strategies and forward-deployed capabilities will be critical to sustaining credible deterrence in both regions. In the Indo-Pacific, allies are seeking greater visibility of U.S. nuclear forces, including forward-deployed assets, to counter China's growing nuclear arsenal. Additionally, discussions about introducing NATO-like nuclear sharing arrangements or enhancing allied participation in nuclear planning have gained some traction in response to the dual threats posed by China and Russia. However, the growing arsenals of both nations place significant strain on U.S. resources, raising concerns about whether the United States can (and has the will) to credibly deter aggression in Europe and the Indo-Pacific simultaneously. This limitation is leading to difficult prioritization decisions, forcing the United States to rely more heavily on allied contributions and regional partnerships.

Assumption #2. Nuclear Weapons as the Ultimate Guarantee of Alliance Security

U.S. nuclear weapons in Europe reinforce the transatlantic link and remain NATO's ultimate security guarantee, but this could be strengthened through more comprehensive burden-sharing by allies. In a two-nuclear-peer environment, NATO faces the dual challenge of deterring Russia while the United States addresses China's growing nuclear threat in the Indo-Pacific. This strain on U.S. nuclear forces raises doubts about sustaining NATO's competitive advantage without greater European contributions, such as enhanced burden-sharing or deeper integration of European nuclear capabilities into NATO's deterrence posture. NATO's reliance on U.S. leadership may also be tested if resources are diverted to the Indo-Pacific, potentially weakening the transatlantic link. To adapt, NATO will need to consider how to modernize its nuclear strategy and posture to remain credible in a two-nuclear-peer world.

Assumption #3. Political and Operational Importance of Nuclear Sharing

Nuclear sharing has long been central to NATO's deterrence and defense posture and remains critical today. However, this assumption is evolving as NATO faces new challenges. The rise of advanced missile technologies, including hypersonics, and the growing nuclear capabilities of adversaries like Russia and China are testing the operational flexibility and credibility of NATO's current nuclear-sharing arrangements. Politically, debates over the stationing of U.S. nuclear weapons in Europe, coupled with differing threat perceptions among allies, risk undermining the unity and indivisibility that nuclear sharing is meant to uphold. To adapt, NATO must continue to modernize and improve the survivability of DCA, enhance nuclear infrastructure, and address divergent political perspectives among allies to ensure nuclear sharing remains credible and effective in a rapidly changing strategic environment.

Assumption #4. Commitment to a Mix of Capabilities

NATO has long emphasized an "appropriate mix" of nuclear and non-nuclear capabilities for deterrence, but it remains to be seen whether the U.S. and its allies have gotten that mix right. Post Cold War, NATO has maintained that parity with Russia in tactical nuclear weapons is unnecessary for effective deterrence—but this assumption may evolve in the coming decade, as strategists and planners assess whether a limited number of B61 bombs provide the required capability, capacity, and flexibility in today's environment. Forward-deployed capabilities remain uniquely valuable for extended nuclear deterrence and assurance, as strategic nuclear forces alone cannot fully meet these requirements. NATO will likely need to reconsider whether its current mix of capabilities is sufficient to address evolving threats and ensure credible deterrence in an era of advanced missile systems and shifting geopolitical dynamics.

Assumption #5. Indispensability of U.S. Nuclear Guarantees

For decades, NATO's deterrence strategy has relied on the indispensability of U.S. nuclear guarantees, as European allies and partners have had no credible alternatives to U.S. extended nuclear deterrence commitments. While France and the U.K. possess independent nuclear capabilities, these have traditionally played a limited role within NATO's collective nuclear posture. However, this assumption may begin to shift as geopolitical dynamics evolve. Growing concerns about the reliability of U.S. security commitments—particularly considering domestic political polarization in the United States and debates over NATO burden-sharing—have

prompted discussions about whether Europe should take on a greater share of nuclear deterrence responsibilities. France and the U.K. could potentially play a larger role in NATO's nuclear posture, investing in developing credible theater nuclear capabilities to enhance the overall deterrence posture and emphasizing their second centers for decisionmaking within the alliance.[439] Such a shift could enhance European strategic autonomy but also raise questions about alliance cohesion, interoperability, and the risks of fragmented decisionmaking in a crisis.

Changing Assumptions for Extended Nuclear Deterrence in the Indo-Pacific

Assumption #1: Bilateral Nature of Alliances

Traditionally, alliances in the Indo-Pacific have been predominantly bilateral, but this assumption is evolving as there is growing practical momentum for trilateral and multilateral cooperation, particularly in response to shared regional threats. For example, the United States, Japan, and South Korea are increasingly coordinating on security issues, moving beyond strictly bilateral arrangements. These shifts reflect the recognition that complex, interconnected threats require collective responses that go beyond the limitations of bilateral frameworks. While bilateral alliances remain foundational, the changing security environment is driving a shift toward more flexible, cooperative, and networked approaches to deterrence and defense, potentially blurring the lines between bilateral and multilateral commitments.

Assumption #2: Reliance on U.S. Strategic Nuclear Forces and Forward-Deployable DCA

Allies in the Indo-Pacific have long relied heavily on U.S. strategic nuclear forces and the option of forward-deployable DCA to ensure credible deterrence and defense. However, this reliance is increasingly being questioned due to growing concerns about the adequacy and availability of U.S. nuclear capabilities allocated to the region. Specifically, the emergence of a two-peer environment—marked by the simultaneous challenges posed by China and Russia—has raised doubts about whether the United States can effectively meet both conventional and nuclear mission requirements across multiple theaters. While there has been some

439 For example, on March 18, 2025, President Macron announced that France will be investing in two new Rafale squadrons (totaling about 40 aircraft) at the Luxeuil-les-Bains base. See Sophia Khatsenkova, "Macron says France will order more Rafale fighter jets in nuclear deterrence drive," *EuroNews* (March 18, 2025). https://www.euronews.com/my-europe/2025/03/18/macron-says-france-will-order-more-rafale-fighter-jets-in-nuclear-deterrence-drive. Accessed March 19, 2025.

adaptation over the last decade, with DCA modernization and rotational bomber displays, the availability of bombers and dual-capable fighter-bombers to address Indo-Pacific contingencies is particularly uncertain, given competing demands in Europe. As a result, allies in the region are exploring ways to enhance their own conventional and strategic capabilities while seeking assurances from the United States about its commitment to maintaining a credible and flexible nuclear posture in the Indo-Pacific. Additional steps are also required to increase the number of globally deployable and deployed nuclear forces in Asia. These evolving dynamics underscore the need for greater coordination, burden-sharing, and adaptability in the face of a rapidly changing security environment.

Assumption #3: Doubts About U.S. Credibility and Cycles of Nuclear Hedging

This assumption is evolving as regional security challenges grow more complex and perceived gaps in U.S. assurances deepen. North Korea's advancing nuclear capabilities and China's expanding influence have intensified concerns regarding U.S. commitments to its allies. The development of intercontinental-range arsenals by both China and North Korea significantly increases the threat to the U.S. homeland, posing a far greater risk than has traditionally been the case. In South Korea, public and political support for an independent nuclear arsenal has shifted from sporadic discussions to sustained pressure for self-reliance. The United States has responded by reaffirming extended nuclear deterrence through increased military exercises, strategic deployments, and deeper security dialogues with allies like South Korea and Japan. However, doubts about U.S. resolve persist, raising the likelihood of prolonged cycles of nuclear hedging unless more robust assurances are provided. Unlike NATO, the Indo-Pacific lacks nuclear-sharing arrangements or nuclear-armed allies, leaving no credible alternatives to U.S. extended nuclear deterrence. This assumption faces renewed challenges as South Korea debates its own nuclear capability, suggesting that nonproliferation among allies may not be guaranteed in the coming decade. Nuclear nonproliferation is increasingly an under-appreciated benefit of extended nuclear deterrence policy, with some returning to the argument[440] that it may be okay if we have "friendly proliferation" or more

440 John J. Mearsheimer, "We Will Soon Miss the Cold War," The Atlantic (August 1990). https://www.theatlantic.com/past/docs/politics/foreign/mearsh.htm. Accessed October 30, 2024.

nuclear allies.[441]

Assumption #4: Divergent Threat Perceptions Among Allies

Divergence in threat perceptions is also gradually evolving as the regional security landscape becomes more interconnected and volatile. North Korea's advancing missile and nuclear programs, coupled with China's assertive behavior in the Indo-Pacific, are driving greater alignment between Japan and South Korea on shared security concerns. Recent trilateral initiatives involving the U.S., Japan, and South Korea—such as enhanced intelligence sharing, joint military exercises, and coordinated responses to regional provocations—reflect a growing recognition of the need for a united front. Nevertheless, challenges persist. Historical tensions and unresolved disputes between Japan and South Korea continue to hinder full alignment, and their respective priorities regarding China remain distinct. While Japan increasingly views China as its primary long-term threat, South Korea remains more focused on the immediate threat posed by North Korea, with a more cautious approach toward Beijing. This evolving dynamic suggests that while threat perceptions among U.S. allies are converging in some areas, significant differences remain, requiring sustained U.S. engagement to foster deeper cooperation and mitigate friction.

Assumption #5: Consultative Mechanisms Have Ensured Progress

Consultative mechanisms in the Indo-Pacific have yielded progress, but evolving threats and ally demands for more robust frameworks highlight their limitations. South Korea and Japan, in particular, have called for mechanisms like NATO's NPG to ensure greater transparency, coordination, and assurance. The EDSCG's ad hoc nature and lack of binding commitments have left some allies feeling that current structures fall short of addressing their security concerns. Moreover, North Korea's

441 Doug Bandow, "Why America's Allies Should Develop Nuclear Weapons," Cato Institute (August 9, 2018), https://www.cato.org/commentary/why-americas-allies-should-develop-nuclear-weapons (accessed October 10, 2024); Doug Bandow, "North Korea: Friendly Proliferation May Beat a Nuclear Umbrella," Cato Institute (September 15, 2016), https://www.cato.org/commentary/north-korea-friendly-proliferation-may-beat-nuclear-umbrella# (accessed October 10, 2024); Doug Bandow, "Let Them Make Nukes: The Case for "Friendly" Proliferation," *Foreign Affairs* (July 2016), https://www.foreignaffairs.com/articles/japan/2016-07-26/let-them-make-nukes (accessed January 10, 2025); Peter D. Feaver and Emerson M. S. Niou, "Managing Nuclear Proliferation: Condemn, Strike, or Assist?" *International Studies Quarterly* 40, No. 2 (1996), pp. 209–33, https://doi.org/10.2307/2600957 (accessed January 10, 2025).

advancing nuclear capabilities and China's assertiveness underscore the need for more institutionalized approaches. Despite U.S. efforts to enhance extended nuclear deterrence through military exercises and deployments, concerns about U.S. credibility persist. Without more formalized frameworks, these mechanisms may struggle to fully address ally concerns and strengthen regional deterrence.

Chapter 5: Exploring Four Extended Nuclear Deterrence Futures

As the nuclear landscape continues to evolve, the future of U.S. extended deterrence remains a critical question for policymakers and allies alike. The United States will face a series of strategic choices in the coming decade, if not sooner. Will the United States favor a downsized security role, taking a step back from its extended nuclear deterrence commitments? Or will the United States decide to extend its deterrence guarantees to additional countries? Alternatively, will the United States maintain its current "steady as she goes" approach, characterized by gradual and tailored adaptations to its deterrence strategy? Or is there a requirement for a new division of labor and rebalancing within existing alliance structures? The answers to these questions will significantly alter the dynamics of nuclear deterrence and the United States' role in global security in the years ahead.

This chapter examines four potential strategies for the coming decade and their implications for U.S. extended nuclear deterrence commitments (summarized in Table 7). Each option presents its own benefits and downsides, which will be explored in detail. While any strategy requiring change involves assuming new risks, similarly, choosing to largely maintain the current course also carries risks. Additionally, I will analyze the considerations, challenges, and external factors that could shape and influence these extended nuclear deterrence choices.

Table 7. Summary of Four Future Extended Nuclear Deterrence Strategies

Strategy	Description	Implications	Features
Strategy 1: Scaling Back Commitments	The U.S. reduces its nuclear extended deterrence commitments, encouraging allies to rely more on conventional forces or self-defense.	Risk of weakened alliances, potential proliferation by allies, and emboldened adversaries.	Increased allied interest in indigenous nuclear programs, adversary provocations, reduced U.S. nuclear forces in Europe.
Strategy 2: Expanding Commitments	The U.S. broadens its nuclear extended deterrence to include new allies or regions, signaling enhanced commitments.	Increased deterrence but higher costs, risk of overextension (in an already overextended environment), and potential escalation with adversaries.	New security agreements, rising U.S. defense budgets, adversary responses like arms buildups or provocations.
Strategy 3: Tailoring Existing Extended Deterrence	The U.S. maintains its existing extended nuclear deterrence commitments with no significant changes in posture.	Stability in current alliances, but potential for strain if adversaries modernize further or allies demand more.	Continued reliance on U.S. nuclear umbrella, moderate allied defense spending, risk of deterrence posture not addressing the threat environment.
Strategy 4: Creating a New Division of Labor	The U.S. redefines the division of labor, encouraging allies to take on greater roles in their own defense while maintaining nuclear guarantees.	Strengthened allied capabilities, more holistic burden sharing picture, but potential for misalignment or confusion in a crisis/conflict.	Increased allied defense spending, joint military exercises, development of regional deterrence strategies.

Strategy Option #1: Scaling Back the U.S. Nuclear Umbrella

The first strategy option to consider is the United States becoming more inward-looking and scaling back its nuclear umbrella in both Europe and the Indo-Pacific in the coming decade. This option raises broader questions about the United States' role in the world, what constitutes our "vital interests," and whether allies and partners are overly reliant on American support. It not only considers how the United States' interests could be significantly narrowed, leading to a very different global footprint in the coming decade, but it begs the question of the practical limits of U.S. power, particularly regarding extended nuclear deterrence. While such an

approach presents a complex mix of potential advantages and disadvantages, it could undoubtedly reshape global security dynamics and alliances.

Table 8. "Scaling Back" Strategy: Ends, Ways, Means

Ends	Ways	Means
Reduce allied reliance on U.S. nuclear extended deterrence	Reassess and redefine the scope of extended deterrence commitments	Diplomatic channels for renegotiating security arrangements
Encourage allies to develop independent defense capabilities	Support the development of conventional and (potentially) nuclear deterrent capabilities among allies	Military resources for adjusting nuclear force posture and (potentially) providing technical assistance
Decrease U.S. strategic exposure	Negotiate new regional security frameworks	Economic resources to support allied transitions and redirect funding
Lower costs of extended deterrence	Gradually reduce forward-deployed nuclear forces and alter nuclear sharing arrangements	Technological capabilities to enhance allied non-nuclear defense systems

One advantage of this future is that it could potentially encourage greater self-reliance among U.S. allies, particularly in Europe. Currently, the discussions around NATO have involved a call for allies to spend more on defense, but in the future, European nations may be compelled to strengthen their defense capabilities, including the development of conventional forces and potentially nucleardeterrents.[442] Some experts argue that nuclear proliferation among allies could create additional "centers of decision," which could complicate an adversary's

442 We are already witnessing the emergence of this debate. See "Macron reopens debate on European nuclear umbrella after Trump-Zelensky showdown," *France 24* (March 3, 2025), https://www.france24.com/en/europe/20250301-macron-reopens-debate-on-european-nuclear-umbrella-after-trump-zelensky-showdown (accessed March 3, 2025); Silvie Corbet, "Poland and Baltic nations welcome Macron's nuclear deterrent proposal," AP News (March 6, 2025), https://apnews.com/article/france-nuclear-deterrent-umbrella-russia-55e91ab65d13559dfc55dfe376ba5268?mkt_tok=ODEzLVhZVS00MjIAAAGZDFaecZ0p (accessed March 6, 2025).

strategic calculus.[443] This could lead to a revitalization of European defense strategies and foster greater autonomy in addressing regional security challenges. Some experts argue that President Trump's current approach to transatlantic relations is providing the necessary impetus for a revitalization of Europe,[444] encouraging European nations to adapt and strengthen their influence on the world stage.[445,446] In fact, the call for a common European defense policy has recently gained momentum, particularly in response to evolving security challenges such as Russia's invasion of Ukraine and broader shifts in U.S. foreign policy.[447] Additionally, reducing extended nuclear deterrence commitments in Europe could potentially allow the United States to focus its resources on domestic priorities or other strategic regions, such as the Indo-Pacific. This recalibration could align U.S. foreign policy with its changing interests in a multipolar world.

443 For a discussion on this topic, see: Maximilian Hoell, Samuel Hickey, Mason Bammer, and Eliza Friend, "Toward a New Division of Deterrence Labor Between and Among the United States and its Allies and Partners, Workshop Summary," (Livermore, CA: Center for Global Security Research, June 2023), p. 6. https://cgsr.llnl.gov/sites/cgsr/files/2024-08/CGSR-Workshop-Summary-2023-06.pdf. Accessed January 10, 2025.

444 For example, some have posited that Trump has pushed the exactly the kind of buttons to spur Europe into action. With Trump in the West and Putin in the East, we will see a Europe that will become more of an asset and less of a risk. Refer to the discussion with Bendikt Franke and Daniel Kurtz-Phelan on Andrea Kendall-Taylor and Jim Townsend, "What's to Come in 2025," Brussel Sprouts (podcast) (January 10, 2025). https://www.cnas.org/publications/podcast/whats-to-come-in-2025. Accessed January 12, 2025.

445 Matthew Burrows argues that EU leaders have been slow to grasp the extent of the geopolitical and geo-economic shifts that have occurred over the past decade. Considering this, he argues that Europe stands at a pivotal moment where it can either persist in its decline or revitalize its position as a global power. See Matthew Burrows, "Could Trump Be Good for Europe?" Stimson Center (September 27, 2024). https://www.stimson.org/2024/could-trump-be-good-for-europe/?utm_source=Stimson+Center&utm_campaign=02116de55d-RA%2FComms%2FSecStrat+Trump+in+Europe&utm_medium=email&utm_term=0_-1e35ece132-%5BLIST_EMAIL_ID%5D. Accessed October 12, 2024.

446 Arancha González Laya, Camille Grand, Katarzyna Pisarska, Nathalie Tocci, and Guntram Wolff, "Can American Abandonment Help Europe?" *Foreign Affairs* (January 6, 2025). https://www.foreignaffairs.com/united-states/can-american-abandonment-help-europe?utm_medium=newsletters&utm_source=fatoday&utm_campaign=The%20Iran%20Opportunity&utm_content=20250106&utm_term=EDZZZ003ZX. Accessed January 7, 2025.

447 Rob Schmitz, "Europe considers a major defense spending package as Trump signals disengagement," NPR (March 4, 2025). https://www.npr.org/2025/03/04/nx-s1-5317453/europe-defense-trump-ukraine-russia. Accessed March 13, 2025.

However, the disadvantages of such an approach are significant. First, a reduction in the U.S. nuclear umbrella could undermine trust among U.S. allies, raising doubts about U.S. credibility and its commitment to collective defense. NATO, for example, relies heavily on U.S. nuclear deterrence, and reducing the U.S. nuclear umbrella could risk creating a security vacuum that would embolden adversaries like Russia. Experts have warned of this security vacuum, noting that adversaries like Russia may perceive U.S. retrenchment or potential withdrawal from Europe as an opportunity to act, exploiting potential weaknesses in NATO's defense posture.[448] Furthermore, if NATO allies were to rely more on the nuclear capabilities of France and the United Kingdom,[449] adversaries may not view these as credible deterrents due to their smaller arsenals and different postures.[450] In my view, there is currently no substitute for U.S. nuclear forces and the critical role they play as the "supreme guarantee of the Alliance."[451] Such a shift could not only embolden adversaries but also potentially lead to a regional deterrence failure, which would not be in the interests of the United States or its allies.[452]

448 As the United States debates its role in global security, Moscow is closely monitoring. As Michta and Brodfueher suggest, Moscow is acutely aware of two scenarios: either the United States withdraws from Europe or becomes unwilling or unable to defend it. See Andrew A. Michta and Joslyn Brodfuehrer, "NATO-Russia dynamics: Prospects for reconstitution of Russian military power," The Atlantic Council (September 19, 2024). https://www.atlanticcouncil.org/in-depth-research-reports/report/nato-russia-dynamics-prospects-for-reconstitution-of-russian-military-power/. Accessed October 30, 2024.

449 Tim Ross, Laura Kayali, and Nette Nöstlinger, "Europe targets homegrown nuclear deterrent as Trump sides with Putin," Politico (February 21, 2025). https://www.politico.eu/article/europe-nuclear-weapons-nato-donald-trump-vladimir-putin-friedrich-merz/. Accessed March 5, 2025.

450 This may not only be the view of adversaries, but also of other allies. Refer to Leila Abboud, Ben Hall, and John Paul Rathbone, "Why Europe cannot rely on French nuclear umbrella alone," *Financial Times* (March 17, 2025). https://www.ft.com/content/7fed8f2b-98c7-43c6-88b3-d66be449bfac?shareType=nongift&mkt_tok=ODEzLVhZVS00MjIAAAGZVDiv-cu2Tf3r8JdnZUqngNDUh1U52io9DshfZbK4P4Ag9NAd0klSo02mAiQV2ViJpcfOcHiiL5qtC719WTkclBlXCryfZFiWnymQlHhA4Ro. Accessed March 17, 2025.

451 "NATO's 2022 Strategic Concept," NATO (last updated March 3, 2023), p. 22, para. 29.

452 As Fayet et al. note, a complete U.S. disengagement from Europe is far from inevitable. The United States will maintain strategic interests in Europe, and the need for a separate European nuclear deterrent has not yet arisen. See Héloïse Fayet, Andrew Futter, Ulrich Kühn, Łukasz Kulesa, Paul van Hooft, and Kristin Ven Bruusgaard, "Forum: European Nuclear Deterrence and Donald Trump." *Survival* 67, no. 1 (2025), pp. 123-142. DOI:10.1080/00396338.2025.2459011. Accessed March 5, 2025.

Another concern is the risk of nuclear proliferation among U.S. allies. If the United States steps back from its extended nuclear deterrence commitments, some experts have argued it may inadvertently encourage nuclear proliferation among allies seeking their own security.[453] Allies may find themselves unable to deter adversaries with conventional means alone and could feel compelled to develop their own nuclear capabilities. Simply put, we likely could have more nuclear allies in this future scenario;[454] however, if the United States withdraws its extended nuclear deterrent commitment to NATO, it risks losing its status as a NATO ally and potentially being left without any allies at all. Without the assurance of U.S. extended nuclear deterrence, allies may feel compelled to develop their own nuclear capabilities, potentially violating the NPT and triggering legal and diplomatic consequences.[455] This proliferation could destabilize regions like Europe and Asia, creating additional "centers of decision" that provoke adversaries and escalate tensions. While some experts have argued that such proliferation could lead to a more stable balance of power,[456] the risks of miscalculation and conflict in the current geopolitical climate are high. For example, absent a U.S. nuclear guarantee in Europe, adversaries like Russia might believe that a disarming first strike against a modest Polish or Finnish arsenal, for example, could succeed. This is not only a huge risk but undermines any sort of regional deterrence.

453 Ankit Panda, Vipin Narang, and Pranay Vaddi, "Nuclear Proliferation Will Haunt 'America First'," *War on the Rocks*, March 10, 2025. https://warontherocks.com/2025/03/nuclear-proliferation-will-haunt-america-first/. Accessed March 10, 2025.

454 Sydney Brashears, Max Hoell, Rupal Mehta, Philipp Rombach, and Caroline Wesson, "Workshop Summary, Deterrence in the 2025 National Defense Strategy Review (Livermore: CA, Center for Global Security Research, December 2024), p.17. https://cgsr.llnl.gov/sites/cgsr/files/2025-02/Deterrence%20Workshop%20Summary_Final.pdf. Accessed March 3, 2025.

455 In an extreme case, Loss posits "if the non-proliferation regime were to crumble under unpunished Russian nuclear use in Ukraine, for example, governments the world over might conclude that it no longer serves their security interests and instead reach for the bomb themselves." See Rafael Loss, "Living in a Nuclear Curious World: America's Weakening Grip on Non-Proliferation," European Council on Foreign Relations (February 13, 2024). https://ecfr.eu/article/living-in-a-nuclear-curious-world-americas-weakening-grip-on-non-proliferation/. Accessed October 12, 2024.

456 Historically, the Cold War era emphasized the importance of "second centers of decision," a concept articulated by Charles De Gaulle and later political theorist Kenneth Waltz, who argued that "more nuclear proliferation may be better." See Kenneth Waltz, "The Spread of Nuclear Weapons: More May Better," Adelphi Papers, no. 171 (London: International Institute for Strategic Studies, 1981).

This approach could also have broader implications for U.S. power projection and the global security order. For over seven decades, U.S. security guarantees have been a cornerstone of the rules-based international system and have greatly benefited the United States' security interests and ability to project power globally. A reduction in U.S. extended nuclear deterrence guarantees could prompt allies to reconsider their overall reliance on the United States, potentially leading to a fragmented security environment and a dramatic shift in the rules-based international order that the United States and its allies and partners have worked to preserve since the end of the second world war—a shift that our adversaries are hoping for, welcoming, and working diligently to ensure. While Europe might adapt by pursuing greater self-reliance, this could also weaken NATO's cohesion and collective strength. Similarly, in the Indo-Pacific, any perceived reduction in U.S. commitments could lead to uncertainty among allies like Japan and South Korea, potentially driving them to explore independent deterrent capabilities.

In both theaters, real alternatives to the U.S. nuclear umbrella include the development of national nuclear programs by individual states,[457] potentially leading to neighboring nations extending deterrence to one another. However, this approach carries the risk that the establishment of additional nuclear capabilities or "Blue second centers" could provoke adversaries, resulting in the creation of more "Red second centers." This dynamic could escalate tensions and contribute to a more unstable security environment, as countries may feel compelled to enhance their own deterrent capabilities in response to perceived threats.

The process of scaling back U.S. commitments could be as a series of incremental decisions rather than a single, sweeping action. While a complete withdrawal from NATO is plausible, there is no evidence of this yet, and instead the United States could begin to recalibrate its commitments in various ways first. For example, though not being currently discussed, the United States could reduce the number of nuclear weapons stationed in Europe or alter its nuclear sharing arrangements with NATO allies. This could involve shifting from a posture of forward-deployed nuclear weapons to a more strategic reserve approach, which would not only be perceived

457 For example, according to *The New York Times,* Poland, Germany and South Korea have made public statements about their consideration of acquiring nuclear weapons. See W.J. Hennigan, "America's Allies Are Shaken, and Now They're Taking Action," *The New York Times* (March 12, 2025). https://www.nytimes.com/2025/03/12/opinion/nuclear-umbrella-us-allies.html?mkt_tok=ODEzLVhZVS00MjIAAAGZMCxSQdKeSIU_0RWVtpyvDJ3cOOjEw2dFps0iTZ0cZIlF_XeV7aRxzwqDHNNnIfaKN2kTeXHE3iUQ-wrP2qSwhtM-FukHppWxBmBuAJ55Smo. Accessed March 13, 2025.

as a reduction in the immediacy of U.S. nuclear guarantees but also give Russia exactly what it seeks.[458]

Driving Factors and Possible Outcomes

Several key factors could influence the United States to scale back its extended nuclear deterrence commitments. First, a significant change in U.S. political leadership and/or a shift in public sentiment towards isolationism could lead to a reduced security role for the United States. As discussed, we are already seeing this shift in the year 2025. The sentiment in the United States in the coming decade will likely remain divided. If political leaders decide to prioritize domestic issues over international commitments, this could result in a further reevaluation of the U.S. broader role in global security. A continued focus on isolationism could lead to significant changes in how the United States engages with the world, potentially diminishing its influence and altering the dynamics of global security.

Economic constraints could also force the United States to reassess its military commitments and capabilities. Financial pressures may lead to a prioritization of domestic spending over international military obligations, prompting a withdrawal from extended nuclear deterrence. This has already been significantly debated with the Ukraine War. Additionally, this strategy may become a reality in the coming decade if U.S. allies are unable or unwilling to fill any security gaps, the United States may reconsider its commitments. A lack of shared responsibility among allies could lead to a perception that the United States is shouldering an unfair burden, prompting a reevaluation of its security role.

Some may argue that advantages to this approach include reducing U.S. military expenditures in the short-term, allowing the United States to focus on domestic

458 For example, prior to re-invading Ukraine, on December 17, 2021, Russia publicly presented a list of security demands to NATO about the Alliance's expansion and the withdrawal of its forces in Eastern Europe. Russia's central demand was that NATO abandon all of Eastern Europe. According to the document, NATO would have to withdraw all military forces to where they were prior to May 1997. This would entail removing NATO forces from all alliance members in Eastern Europe, including Poland and the Baltic States. NATO would also be forbidden from aiding non-member states like Ukraine and countries in the Caucasus and Central Asia. The document would also effectively ban NATO expansion by preventing any new members from joining the Alliance without Russian approval. Another Russian demand was that the U.S. remove its remaining nuclear weapons from Europe. According to Russia's proposed treaty with the United States, neither country could deploy nuclear weapons outside its territories.

priorities.[459] It would also potentially promote regional powers to develop their own security frameworks and become more self-reliant in terms of defense,[460] instead of having the United States bail them out. And it could minimize the risk of the United States being drawn into conflicts that do not directly threaten U.S. interests.

However, the disadvantages of this approach outweigh any short-term advantages. If the United States and its allies were witnessing a more benign security environment, then this approach toward U.S. isolationism would maybe be fit for purpose. However, as discussed, the global landscape is far from benign. This future sees the United States reducing its extended nuclear deterrence commitments, leading allies to feel abandoned, potentially leading to instability in regions where the United States decides to withdraw its support. There could be second-order effects, primarily the risk of proliferation, potentially leading to nuclear proliferation as allies and potentially other partners seek their own security. This could have dramatic implications for the health of the NPT architecture. Moreover, there are ethical and moral implications to consider if more allies pursue their own nuclear capabilities. The United States has long championed nonproliferation, and scaling back its nuclear capabilities could be perceived as a retreat from these principles, undermining its moral authority on the global stage. The potential backlash from the international community could be severe, as nations may interpret any reduction in U.S. nuclear capabilities as a sign of weakness or inconsistency in American policy, further escalating tensions and challenging U.S. leadership. Lastly, any sort of U.S. retreat and withdrawal could weaken regional deterrence and allow adversaries to fill the power vacuum, leading to increased aggression and instability.

Strategy Option #2: Expanding the Nuclear Umbrella

In the coming decade, the United States could face a pivotal decision regarding the extension of its nuclear umbrella to additional countries, such as Egypt, Saudi Arabia, and the Philippines. This choice could be triggered by a significant event,

459 "President Trump's America First Priorities," The White House (January 20, 2025). https://www.whitehouse.gov/briefings-statements/2025/01/president-trumps-america-first-priorities/. Accessed March 10, 2025.

460 Kim Barker, Jeanna Smialek, and Steven Erlanger, "Europe Prepares to Face Russia as Trump's America Steps Back," *The New York Times* (February 24, 2025). https://www.nytimes.com/2025/02/24/world/europe/europe-ukraine-anniversary.html. Accessed March 10, 2025.

such as the limited use of nuclear weapons in a regional conflict, which would starkly highlight the vulnerabilities of non-nuclear states and intensify calls for U.S. nuclear protection. Such an event could lead to heightened security concerns among U.S. allies and partners, particularly in regions like East Asia and the Middle East, where rising nuclear threats from nations like North Korea and Iran, coupled with the aggressive posturing of China or Russia, are already creating an unstable security environment.

Table 9. "Expanding" Strategy: Ends, Ways, Means

Ends	Ways	Means
Strengthen U.S. global influence	Extend nuclear deterrence guarantees to additional allies or partners	Diplomatic channels to negotiate new security agreements
Enhance allied security and confidence	Increase nuclear deployments and visibility in strategic regions	Military resources for bolstering nuclear presence and infrastructure
Deter adversaries from aggression	Develop integrated defense strategies and nuclear planning with allies	Economic resources for sustaining expanded deterrence operations
Ensure stability in volatile regions	Conduct frequent military exercises, joint training, and readiness drills	Modernization and improvement in U.S. nuclear arsenal

While the prospect of expanding the nuclear umbrella may appear to offer reassurance to allies and deter adversaries, it is fraught with significant risks and complex challenges. First, extending nuclear deterrence to additional states could strain U.S. resources in a two-nuclear-peer environment, where both Russia and China possess advanced nuclear capabilities. Managing such commitments would require substantial investments in military infrastructure, personnel, and strategic planning, potentially diverting attention and resources from other critical national security priorities.

Second, expanding the nuclear umbrella could provoke unintended consequences, such as escalating tensions with adversaries who may perceive the move as a direct threat to their security. This could lead to an arms race or more aggressive behavior, undermining regional stability and increasing the risk of miscalculation. Furthermore, the operational challenges of extending credible nuclear deterrence to new states—each with unique security concerns, political

dynamics, and regional relationships—could complicate U.S. strategic planning and risk overstretching its commitments.

Finally, such a move could undermine broader U.S. strategic interests by fostering dependency among allies and reducing incentives for them to invest in their own conventional defense capabilities. This could weaken the long-term sustainability of collective security arrangements and create a perception of U.S. overreach, potentially alienating key partners.

In the Middle East, if Iran crossed the nuclear threshold and weaponized its program, the United States would likely need to evaluate the prospects of extending its nuclear deterrence guarantees to regional allies and partners, including Egypt (a major non-NATO ally), Saudi Arabia, and other Gulf States. This decision would involve a delicate balance: committing to defending these nations while simultaneously avoiding a proliferation cascade by encouraging them to refrain from developing their own nuclear arsenals. The United States would need to reassure its allies that they would be protected from Iranian aggression, while also promoting nonproliferation efforts. As some experts have argued, a Middle East with multiple nuclear states would be significantly more unstable than the current status quo.[461] A key aspect of U.S. extended deterrence in the region would therefore be to ensure that, even if Iran develops nuclear capabilities, it cannot intimidate its neighbors with provocative or destabilizing actions.

However, extending nuclear deterrence in the Middle East comes with significant risks. Clarifying U.S. security commitments and the specific threats they aim to deter would be essential, but this process could provoke unintended consequences. For example, extending the nuclear umbrella to countries like Saudi Arabia might escalate tensions with Iran, which could perceive the move as a direct threat and respond by accelerating its nuclear program or increasing its regional aggression. Such actions could, in turn, trigger a regional arms race, with other powers like Turkey or Egypt seeking advanced weaponry, further destabilizing the region. Additionally, heightened tensions could increase the risk of miscalculation or accidental conflict, undermining stability and potentially entangling the United States in a regional war.

461 "Chapter 7: Extended Deterrence and The Middle East," in Richard C. Bush, Vanda Felbab-Brown, Martin S. Indyk, Michael E. O'Hanlon, Steven Pifer, and Kenneth M. Pollack, *U.S. Nuclear and Extended Deterrence: Considerations and Challenges* (Washington, DC: Brookings Institution, May 2010), pp. 41-43. https://www.brookings.edu/wp-content/uploads/2016/06/06_nuclear_deterrence.pdf. Accessed March 17, 2025.

Therefore, a careful assessment of the potential consequences of extending deterrence in the Middle East would be necessary, especially in terms of maintaining stability and avoiding military escalation. One of the foremost challenges would be understanding the unique security dynamics of the region and what America's role will be,[462] as extending deterrence to the conflict-ridden Middle East would require the United States to navigate a complex web of alliances and rivalries. The United States would therefore need to consider how its commitments might influence the behavior of both allies and adversaries.

In this scenario, the United States likely would continue to carefully avoid war with Iran. However, this is not guaranteed, as regional allies, such as Saudi Arabia or Israel, may pursue their own security agendas that do not necessarily align with U.S. interests, potentially entangling the United States in a regional conflict it seeks to avoid. As Bush et al. note, "As history has demonstrated, great powers can sometimes get sucked into regional wars by their alliance commitments to client states pursuing their own interest."[463]

Furthermore, expanding the nuclear umbrella to the Middle East could come at the expense of other U.S. allies and commitments, especially in a resource-constrained environment. The feasibility of operationalizing such a commitment must be carefully considered, along with its alignment with broader U.S. interests. The assumption that nonproliferation will be maintained among U.S. allies in the region also raises questions about how long this stability can realistically be sustained. Ultimately, extending deterrence to the conflict-ridden Middle East could be a formidable challenge in this future scenario, requiring the United States to undertake new and far-reaching commitments to the defense of its Arab and Israeli allies, with uncertain prospects for success.[464]

In Asia, countries, such as the Philippines, may seek enhanced security assurances from the United States, especially if the United States continues to focus

462 See Dalia Dassa Kaye, "America's Role in a Post-American Middle East," *The Washington Quarterly* 45, no. 1 (2022), pp. 7-24, https://bpb-us-e1.wpmucdn.com/blogs.gwu.edu/dist/1/2181/files/2023/10/DDK_45-1_TWQ.pdf. Accessed March 17, 2025.

463 "Chapter 7: Extended Deterrence and The Middle East," in Richard C. Bush, Vanda Felbab-Brown, Martin S. Indyk, Michael E. O'Hanlon, Steven Pifer, and Kenneth M. Pollack, *U.S. Nuclear and Extended Deterrence: Considerations and Challenges* (Washington, DC: Brookings Institution, May 2010), p. 43.

464 For a more in-depth discussion on extending deterrence in the Middle East, see Greg Weaver and Asmeret Asghedom, "Chapter 12: The Limited Prospects for U.S. Extended Deterrence in the Middle East," in Asmeret Asghedom, ed., *The Nuclear Future of the Middle East* (Livermore, CA: Center for Global Security Research, January 2025), pp. 161-181.

more on the Indo-Pacific and if Manila becomes even more in the nuclear crosshairs with China. The Philippines holds significant importance to U.S. interests in Asia, and our commitments there are described as "ironclad". Moving forward, it will be necessary to evaluate whether the United States should eventually provide an explicit nuclear extended deterrence guarantee. Manila is closely observing U.S. extended deterrence commitments to the ROK and Japan, and it is willing to defend U.S. interests, recalling its historical cooperation with the United States in previous conflicts.[465] The Philippines understands the challenges posed by China, and as tensions in the region escalate, the United States could consider formally extending its nuclear umbrella to Manila. This decision would obviously require careful assessment of how such guarantees could influence regional dynamics and deter potential aggressors. If the United States did decide to articulate explicit guarantees to the Philippines, consultative mechanisms may already exist beyond the bilateral meetings between Washington and Manila. For instance, the Philippines currently participates in the U.S.-Philippines-Japan Triad, which focuses on maritime security. This triad could serve as a potential future forum for enhancing security cooperation in the nuclear realm.

Driving Factors and Possible Outcomes

In the short-term, this strategy appears unlikely given this would be an incredibly tough sell in today's political environment. Beyond the next four years, broader concerns about the implications of nuclear weapons in general, the costs associated with expanding military commitments, and the potential for entanglement in foreign conflicts will likely influence public opinion and political discourse and make this expansion strategy unrealistic in the coming decade.

In the long-term, if the United States did ever face the decision to expand its nuclear umbrella to additional countries, the United States would need to navigate regional security dynamics, manage alliance expectations, constantly assess proliferation risks, and ensure military readiness while balancing domestic and international political factors. Below are the key factors that could shape this decisionmaking process.

One factor that could drive this future is our growing reliance on partners and allies and their increasing significance for U.S. interests. For instance, as the Philippines becomes more engaged in regional security issues and the United States

465 Thomas Lum, Christina L. Arabia, and Ben Dolven, "The Philippines: Background and U.S. Relations," Congressional Research Service (Updated September 14, 2022). https://www.congress.gov/crs_external_products/R/PDF/R47055/R47055.4.pdf. Accessed March 17, 2025.

grows increasingly reliant on Manila in specific ways, the possibility of Washington and Manila establishing a formal extended deterrent relationship remains uncertain. Although this scenario may seem implausible to some, these relationships are dynamic, and expectations of the United States and its security guarantees are likely to evolve over time. Moreover, for this strategy, direct requests from allies for enhanced security guarantees could play a significant role in shaping U.S. extended deterrence policy.

Another significant consideration is the risk of nuclear proliferation. Extending the nuclear umbrella, I argue, may encourage some allies to forego their own nuclear ambitions, but it could also lead others to pursue independent nuclear capabilities if they perceive the U.S. commitment as insufficient and not credible. For instance, if the United States expands its nuclear umbrella to specific allies in the Middle East, this could affect the credibility of its assurances to allies in other regions who may feel less secure about the sanctity of the U.S. commitment. If the ROK continues to doubt U.S. credibility while the United States prioritizes protecting other nations, South Korea could feel abandoned and potentially pursue its own nuclear capabilities. To prevent this, the United States would need to reassure allies that resources will not be diverted from their security. However, this may prove challenging given the pressures of the current U.S. nuclear modernization Program of Record and the country's evolving foreign policy shifts. Therefore, divided attention and resources stretched even thinner could have a countereffect on the existing extended nuclear deterrence arrangements. The United States must carefully consider the potential benefits of deterrence against the risks of fostering an increased nuclear-armed world, even if such proliferation is viewed as "friendly." This is especially critical in volatile regions like the Middle East and considering the fragile confidence in U.S. extended deterrence commitments in Asia.

Third, the U.S. military's ability to project power and respond to strategic threats is a critical factor in the feasibility of extending deterrence. In an era of strategic competition, the United States must evaluate whether it can continue to extend its nuclear deterrent to other countries. This requires a thorough assessment of current military capabilities and readiness to support additional commitments. This includes evaluating the logistical, operational, and financial implications of expanding its nuclear deterrent, including an assessment of its conventional capabilities. The United States must ensure that it can effectively defend its allies without overstretching its resources or compromising its own security.

While expanding the U.S. nuclear umbrella could allow for the United States to expand its influence and presence in key strategic regions, reinforcing its role

as a global leader in security matters, there are notable disadvantages to consider as well. Providing additional nuclear guarantees would be resource-intensive, requiring significant military and financial investments that may further strain U.S. capabilities. Additionally, increased commitments could lead to an entanglement risk, potentially drawing the U.S. into conflicts that are not directly aligned with its national interests. Finally, the act of extending these guarantees may provoke nuclear-armed adversaries, heightening tensions and potentially increasing the risk of conflict, which could have unintended consequences for U.S. security and global stability.

Given these factors, these risks outweigh any benefits in the coming decade. While the nuclear umbrella could provide reassurance to newly covered states, it might also invite instability, as concerns about U.S. reliability could arise, and regional powers may react defensively. Ultimately, the impact of such an expansion would depend on the reactions of both allies and adversaries, necessitating careful consideration by U.S. policymakers regarding its strategic implications. But given that U.S. credibility with our extended deterrence commitments are already being questioned, U.S. resources are already strained, and allies are anxious in today's environment, expanding our commitments, especially in a two nuclear peer environment, does not seem like a prudent future choice.

Strategy Option #3: "Steady as She Goes," Gradual, Tailored Adaptations

As the United States continues to navigate the complexities of the evolving two-nuclear-peer security environment, it also has the choice to continue its current approach to extended nuclear deterrence through a series of gradual, step-by-step tailored adaptations. This has been the consistent approach to U.S. policy as outlined over the last three Nuclear Posture Reviews. At the forefront of this choice to maintain the current course is an emphasis on hardware to strengthen regional nuclear deterrence architectures.

Table 10. "Steady As She Goes" Strategy: Ends, Ways, Means

Ends	Ways	Means
Maintain current extended deterrence strategy	Make incremental adjustments to nuclear posture while preserving existing commitments	Diplomatic engagements to monitor and address evolving security threats and assurance challenges
Adapt to emerging security challenges	Tailor nuclear deterrence strategies to address specific regional dynamics and threats	Military resources for selective forward deployments and/or signaling campaigns
Preserve allied confidence in U.S. commitments	Continue to enhance communication, transparency, and consultation with allies regarding nuclear deterrence policies	Economic resources for modernization and sustainment of nuclear systems
Avoid escalation or destabilization	Implement calibrated and proportional responses to adversary actions or provocations	Technological upgrades to ensure the reliability, flexibility, and survivability of nuclear forces

A "steady as she goes" approach would likely continue to ensure the timely delivery of the promised capabilities, including the F-35, B61, B21, LRSO, and SLCM-N as U.S. allies will continue to seek visible and concrete demonstrations of U.S. intentions and capabilities. On the hardware side in the European theater, NATO's efforts to date include modernizing the U.S. B61s stored in Europe and the allied DCA assigned to deliver them under NATO's nuclear-sharing arrangements. There has also been an increase in the Alliance's understanding of Russia's nuclear strategy and doctrine, as well as improvements in NATO's nuclear planning, exercises, and strategic communications. Additionally, there has been a growing understanding among all allies of what the DCA mission entails, encompassing everything from DCA certification to operations. These updates and adaptations would likely continue in a "steady as she goes" future.

In the Indo-Pacific, the United States could continue to field nuclear forces. However, it has been recognized that U.S. strategic nuclear forces are increasingly not flexible or timely.[466] As experts have noted, regionally deployed strategic bombers provide a presence in the Indo-Pacific region but are vulnerable to attack

466 This has also been argued in a NATO context. According to Weaver, "Strategic nuclear forces alone are insufficiently flexible and timely to convince Russian leadership that NATO is fully prepared to counter limited nuclear first use with militarily effective nuclear responses of our own." See Gregory Weaver, "The urgent imperative to maintain NATO's nuclear deterrence," *NATO Review* (September 29, 2023).

and lack prompt strike capability.[467] Roberts has argued that while heavy bombers are useful supplements to forward-deployable non-strategic systems, they are not a substitute, nor do they convey the resolve of U.S. allies to defend their interests when faced with nuclear risk.[468] Further, it seems apparent that there is a need to modify the U.S. theater nuclear force posture to add flexibility and strengthen regional deterrence.[469] Any step-by-step adaptation could address the future of forward deployed weapons.

Notably, given concern that Russia and/or China could exploit their growing superiority in regional nuclear capabilities over the U.S.-led alliances in Europe and Asia, the Strategic Posture Commission concluded that additional U.S. theater nuclear capabilities will be necessary in both Europe and the Indo-Pacific to deter adversary nuclear use and offset local conventional superiority. The Commission proposed developing and deploying theater nuclear delivery systems that have some or all the following attributes:

1. Forward-deployed or deployable in the European and Asia-Pacific theaters;
2. Survivable against preemptive attack without force generation day-to-day;
3. A range of explosive yield options, including low yield;
4. Capable of penetrating advanced IAMD with high confidence; and
5. Operationally relevant weapon delivery timeline (promptness).[470]

467 "Implications for Extended Deterrence," in *China's Emergence as Second Nuclear Peer: Implications for U.S. Nuclear Deterrence Strategy, A Report of a Study Group Convened by The Center for Global Security Research at Lawrence Livermore National Laboratory* (Livermore, CA: Center for Global Security Research, 2023), p. 49.

468 Brad Roberts, "The Plausible Alternative to the South Korean Bomb," in Brad Roberts, ed., *Deterring a Nuclear-Armed North Korea* (Livermore, CA: Center for Global Security Research, 2023), p. 35.

469 For a further discussion on this, see "U.S. Committee on Armed Services United States Senate Hearing to Receive Testimony on Regional Nuclear Deterrence, Statement of Brad Roberts, Ph.D., Director of the Center for Global Security Research, Lawrence Livermore National Laboratory" (March 28, 2023); Artur Kacprzyk, "NATO Nuclear Adaptation Rationales for Expanding the Force Posture in Europe," PISM Report (November 2023). https://www.pism.pl/webroot/upload/files/Raport/PISM%20Report%20NATO%20Nuclear%20Adaptation.pdf. Accessed March 2, 2025.

470 Congressional Commission on the Strategic Posture of the United States, *America's Strategic Posture, Final Report* (October 2023), p. 49.

Given the geographic distance between the U.S. homeland and its allies overseas, U.S. nuclear forces being available in theater for deterrence and assurance purposes is a worthy recommendation. Therefore, a "steady as she goes" approach could include forward-deployed or deployable capabilities in both European and Asia-Pacific theaters.

Another crucial component of this approach is software, namely enhancing consultations with allies and partners. The Biden administration took important steps to strengthen extended nuclear deterrence assurances to U.S. allies and deepen planning and coordination on key crisis management issues. These efforts could be further institutionalized with this future strategy. Efforts could focus on ensuring that U.S. policymakers and military planners work through hypothetical conflict scenarios, alongside U.S. allies, to allow for an intense interaction between planners and civilian leaders. Dialogue like this leads to effective policy, as it is an invaluable means for better understanding of those "unplannable" circumstances. It is critical that allies share common understanding of these hypothetical scenarios with Russia, China, and North Korea, and discuss how different allies could integrate conventional and nuclear operations during a crisis or implement specific actions to deter opportunistic aggression. A lot of progress has been made in this regard,[471] and in the near term, the United States should continue to conduct tabletop simulations to prepare U.S. and allied forces for various crisis scenarios, fostering coordinated responses and establishing clear communication protocols.

Greater coordination for consultative mechanisms could also be supported in this future, including enhanced trilateral cooperation in the Indo-Pacific. This could facilitate information sharing among the United States, Japan, and South Korea, considering their differing threat assessments, priorities, and perspectives on nuclear issues. Many experts believe that trilateral coordination, particularly at the classified level, could effectively complement existing bilateral channels.[472]

471 "S. Korea, US to hold tabletop exercise on nuclear deterrence next week," *Korea Times* (November 28, 2024), https://www.koreatimes.co.kr/www/nation/2024/12/113_387245.html (accessed March 17, 2025); Hyonhee Shin, Trevor Hunnicutt, and Soo-Hyang Choi, "South Korea, U.S. in talks over nuclear planning, tabletop exercise," Reuters (January 3, 2023), https://www.reuters.com/world/skorea-is-discussing-joint-planning-implementation-operations-using-us-nuclear-2023-01-03/ (accessed March 17, 2025).

472 Ross Buchanan, Lesley Kucharski, Anna Péczeli, and Kimberly Peh, "Event Report: Extended Deterrence in the Indo-Pacific — A Regional Track 1.5 Dialogue, September 26-27, 2024," (Center for Global Security Research, Organized by the Center for Global Security Research, National Institute for Defense Studies, Korean Institute for Defense Analyses, Australian Strategic Policy Institute, September 2024), p. 6. https://cgsr.llnl.gov/sites/cgsr/files/2024-11/event_report_-_extended_deterrence_in_the_indo-pacific.pdf

One area for enhanced consultations involves the United States and its allies analyzing the implications of potential involvement by Russia and China in any future conflict. For instance, it is increasingly difficult to envision a conflict on the peninsula where China and Russia remain uninvolved. U.S. allies around the globe are grappling with these shifting dynamics, particularly as the Sino-Russian partnership has grown stronger than the Sino-Soviet one, with no indication of a split in the near future. This raises the need to reassess whether these changes are altering the requirements for extended nuclear deterrence and assurance in the region. Through a gradual, tailored approach to strengthening allied consultations, the United States and its allies could collectively evaluate these dynamics and determine if adjustments to extended nuclear deterrence and assurance are needed in each theater. Having a shared understanding with our allies on the spectrum of alignment among Russia, China, North Korea, and even Iran will likely become increasingly important in the coming years.

Furthermore, given the uncertainty surrounding the nature of the next war and what it will look like, there is a pressing need to further utilize these consultations for concept development with allies to better prepare for future challenges. As Roberts has suggested, one adaptation would be to develop U.S. and allies' theories of victory in peacetime competition, crisis, and war against nuclear-armed adversaries and the associated concepts for escalation, de-escalation, and war termination that integrate conventional and nuclear operations.[473]

Driving Factors and Possible Outcomes

Several factors could influence the United States' decision to pursue a gradual, step-by-step approach. One benefit is that it could maintain a sense of continuity, stability, and reliability for allies. It also allows for incremental changes based on emerging threats without major overhauls. However, it is equally important to evaluate whether this approach provides the necessary assurance or risks being perceived as "strategic hesitation" by U.S. allies. Gradual adaptations may be interpreted as indecisiveness or a lack of interest and resolve, potentially emboldening adversaries. In my view, "steady as she goes" is insufficient to address the threats we face. This strategy risks being seen by adversaries as a sign of excessive self-restraint on the part of the United States and its allies, a risk that cannot be ruled out.

473 "U.S. Committee on Armed Services United States Senate Hearing to Receive Testimony on Regional Nuclear Deterrence, Statement of Brad Roberts, Ph.D., Director of the Center for Global Security Research, Lawrence Livermore National Laboratory" (March 28, 2023).

Second, the changing domestic politics in both the United States and allied nations will likely not allow for a business-as-usual approach. We are already witnessing this with President Trump's desire to focus on "America First" and having our allies pay up, as well as ROK President Yoon's impeachment that has created a wave of upheaval in South Korea.[474] We likely will see significant policy changes in the near-term making a return to "steady as she goes" in the long-term unlikely.

Third, this approach assumes that there will not be drastic changes in the security environment, an assumption that is unlikely to hold true. New insights into adversary thinking may emerge, requiring a shift in strategy. For instance, if China's nuclear ambitions become clearer or Beijing achieves nuclear superiority, a different approach may be necessary. While the "steady as she goes" approach allows for tailored adaptations, that may not be sufficient for the future security environment. Still, the United States and allied threat assessments could lead to gradual adaptations in extended nuclear deterrence policy rather than drastic changes. For example, while this paper has made the argument that the security environment is presenting new and simultaneous deterrence challenges, some experts from allied nations argue that the focus on a "two-peer challenge" is primarily a U.S. framing.[475] If U.S. allies continue to think that the two-peer problem is a U.S. problem, then gradual adaptations may be the future course of action. However, this perspective is not helpful and appears to be changing with allies who are embracing the emerging problem set.

In this future scenario, key capability challenges will remain. For example, the possibility of the United States forward-deploying nuclear weapons in the Indo-Pacific region or implementing flexible stationing of U.S. nuclear weapons during times of crisis may arise. If such measures become necessary in the coming decade, the United States would need to work with allied nations to establish the proper infrastructure now, while initiating in-depth discussions regarding required capabilities. For example, highly dispersible assets would potentially be required in the region, which could include ground-launched systems or potentially SSNs

474 Raphael Rashid, "Threats, prayers and protests: the supporters backing South Korea's impeached president," *The Guardian* (January 27, 2025). https://www.theguardian.com/world/2025/jan/28/yoon-suk-yeol-impeachment-charges-insurrection-supporters. Accessed March 17, 2025.

475 "The Emerging Two-Peer Challenge and the Future of Nuclear Strategy," from NATO'S New 'Deterrence Baseline' and the Future of Extended Nuclear Deterrence, Wilton Park, (19-22 July 2023). https://www.wiltonpark.org.uk/reports/natos-new-deterrence-baseline-and-the-future-of-extended-nuclear-deterrence/the-emerging-two-peer-challenge-and-the-future-of-nuclear-strategy/. Accessed November 22, 2024.

carrying SLCM-N that are based and/or rotated through allied nations. Additionally, for a NATO context, the F-35 is fit for purpose for now and until the foreseeable future, but it will be worth thinking about future IAMD environments, which should also be a consideration for U.S. strategy.[476] NATO may need air-launched standoff capabilities for greater flexibility.

In the Indo-Pacific, the F-35 is not fit for purpose. The system has insufficient range for the region, requires overflight of the target, cannot meet all operationally significant timelines, and lacks sufficient survivability. Additionally, China's advancements in IAMD capabilities call into question the future effectiveness of DCA armed with gravity bombs and point to the utility of a stand-off capability that could also be addressed in this future strategy. While SLCM-N may fill an important gap in this regard, more diversity may be needed.

Additional considerations include whether the "steady as she goes" approach is sufficient for strengthening regional nuclear deterrence architectures, whether the United States possesses the appropriate nuclear forces for extended deterrence, and whether U.S. and allied actions under this approach effectively complicate adversary decisionmaking. There is also the risk that the United States and its allies could be outpaced technologically or capability-wise by adversaries. These issues require careful consideration as the United States navigates whether to maintain the current course with its extended nuclear deterrence policy and strategy. If something more and/or different is required regarding U.S. nuclear forces for extended deterrence, as suggested by the Strategic Posture Commission,[477] then this will not be the right approach for the United States and its allies.

By maintaining an overly constrained and incremental approach to nuclear adaptation, the United States and its allies may be tolerating too much risk of deterrence failure. In the Indo-Pacific, there is a growing concern among experts that a nuclear-armed challenger determined to change the status quo by force

476 NATO has made some progress in this regard. In February 2025, the Alliance released its first public summary of its Integrated Air and Missile Defense Policy. See "NATO Integrated Air and Missile Defence Policy," NATO (February 13, 2025). https://www.nato.int/cps/en/natohq/official_texts_233084.htm. Accessed March 6, 2025.

477 Congressional Commission on the Strategic Posture of the United States, *America's Strategic*
Posture, Final Report (October 2023), pp. 32, 34, 96.

cannot be deterred.[478] This concern may not warrant an incremental, step-by-step adaptation. In the European theater, some argue that by focusing on incrementally strengthening deterrence and avoiding taking more difficult steps, NATO is sending mixed signals about its willingness to defend itself.[479] Therefore, it is worth considering the need for additional actions beyond simply taking gradual steps. Evaluating whether the United States and its allies should increase their efforts and determining how deterrence responsibilities might be shared and divided are critical aspects to properly address.

Strategy Option #4: A New Division of Labor, Rebalancing Within Existing U.S. Alliance Structures

In the coming decade, the final alternative option is to establish a new division of labor with and between the United States and its allies.[480] In Europe, some encouraging progress has already been made in this regard with allies spending 18% more on defense than they did a year ago. More than two-thirds of NATO members now meet or exceed the alliance's target of spending at least two percent of GDP on defense.[481] Despite this progress, there is a call on allies to shoulder a greater share of the deterrence burden, and some have specifically recommended that at the next NATO summit, allies should set a higher defense-spending target of 3% of GDP and

478 Jacek Durkalec, Charlotte Henderson, and Lindsay Rand, "Panel 3: The Global Deterrence Challenges of War in Europe," in *Extended Deterrence and the Two War Problem, Workshop Summary* (Livermore, CA: Center for Global Security Research, April 2022), pp. 7-9. https://cgsr.llnl.gov/content/assets/docs/Workshop_Extended_Deterrence_and_Two_War_Problem_CGSR_Summary.pdf. Accessed September 10, 2024.

479 William Alberque and Artur Kacprzyk, "More Pillars Needed: Ten Options for Europe to Improve NATO's Nuclear Deterrence," Stimson Center (October 2, 2024).

480 In 2023, CGSR conducted a workshop on this topic with a final report, refer to Maximilian Hoell, Samuel Hickey,
Mason Bammer, and Eliza Friend, "Toward a New Division of Deterrence Labor Between and Among the United States and its Allies and Partners" (Livermore, CA: Center for Global Security Research, June 2023); Brad Roberts has also written on this. See Brad Roberts, "The Next Chapter in US Nuclear Policy," *The Washington Quarterly* 47, no. 2 (July 2024), pp. 7-21. https://cgsr.llnl.gov/sites/cgsr/files/2024-08/next-chapter-us-nuclear-policy.pdf. Accessed March 14, 2025.

481 Clara Falkenek, "Who's at 2 percent? Look how NATO allies have increased their defense spending since Russia's invasion of Ukraine," Atlantic Council (July 8, 2024). https://www.atlanticcouncil.org/blogs/econographics/whos-at-2-percent-look-how-nato-allies-have-increased-their-defense-spending-since-russias-invasion-of-ukraine/. Accessed March 17, 2025.

commit to increasing their base budgets accordingly.[482] However, percentage of GDP for defense spending is not a good measure of the outcome for extended nuclear deterrence. Moreover, the fact that Poland has been able to commit five percent of its GDP[483] highlights that there is certainly room for NATO allies to do more for regional nuclear deterrence, creating a more comprehensive burden sharing picture.

Table 11. "A New Division of Labor" Strategy: Ends, Ways, Means

Ends	Ways	Means
Optimize alliance burden-sharing	Reallocate roles and responsibilities among allies	Diplomatic negotiations to redefine alliance agreements and roles
Strengthen collective defense capabilities	Encourage allies to take on greater regional security roles, including conventional deterrence responsibilities	Military support for allied capacity-building
Enhance efficiency in alliance operations	Coordinate joint training and operational planning for nuclear deterrence scenarios	Economic investments in shared defense infrastructure
Reduce U.S. overextension	Focus U.S. resources on strategic priorities while allies address localized threats	Information sharing and collaboration within alliances

To that end, in a "new division of labor" future, discussions around burden sharing should prioritize changing the current nuclear burden-sharing status quo by specifically expanding and broadening nuclear sharing arrangements. As Alberque and Kacprzyk have argued, all NATO Allies can enhance deterrence and share the nuclear burden more effectively; broader allied contributions to nuclear deterrence would better signal their resolve to defend each other despite nuclear threats or even use.[484] Allies should prioritize how to broaden their participation in Conventional Support for Nuclear Operations (CSNO) (formerly known as

482 Mitch McConnell, "The Price of American Retreat: Why Washington Must Reject Isolationism and Embrace Primacy," *Foreign Affairs* (January/February 2025). https://www.foreignaffairs.com/united-states/price-american-retreat-trump-mitch-mcconnell?utm_medium=newsletters&utm_source=fatoday&utm_campaign=The%20Price%20of%20American%20Retreat&utm_content=20241216&utm_term=EDZZZ003ZX. Accessed February 2, 2025.

483 "Poland to spend 5% of GDP on defence in 2025, says foreign minister," Reuters (July 13, 2024). https://www.reuters.com/business/aerospace-defense/poland-spend-5-gdp-defence-2025-says-foreign-minister-2024-07-13/. Accessed February 2, 2025.

484 William Alberque and Artur Kacprzyk, "More Pillars Needed: Ten Options for Europe to Improve NATO's Nuclear Deterrence," Stimson Center (October 2, 2024).

Support of Nuclear Operations With Conventional Air Tactics; SNOWCAT) and related exercises.[485] Many have also argued that options include non-nuclear allies contributing conventional capabilities, such as surveillance drones, precision-guided munitions, mobile air and missile defense, and aerial refueling tankers.[486] At the very least, a "division of labor" would have all NATO allies, including non-nuclear nations, participating in NATO's annual STEADFAST NOON exercise. This is not only an important messaging tool for NATO, but also a training exercise that is critical to conduct as the alliance prepares for future contingencies. More favorable, is that in this alternative strategy, Europeans assume a greater share of the nuclear burden, given the limited capacity of the U.S. industrial complex to expand its efforts quickly. This would not only require an increase in the number of DCA and CSNO nations but also necessitate Britain and France investing in the development of credible theater nuclear capabilities to enhance the overall NATO deterrence posture.

In this future, a broader range of nuclear and conventional capabilities could provide flexible, credible response options and reduce the risk of escalating to a full-scale nuclear conflict. A critical first step in this process, as many have highlighted,[487] could be to re-examine NATO's nuclear posture. The United States and its allies could work to certify more allied F-35 outside the current DCA nations. If NATO considers including its newer member states in nuclear sharing arrangements, which

485 CSNO is critical for the success of NATO's nuclear mission, including fighter escort, refueling, ISR, and suppression or destruction of enemy air defenses. It also includes indirect support, such as strategic lift, fuel, conventional ammunition, maintenance and repair, base support (guards, food, medical, and chemical, biological, radiological, and nuclear defense), air and missile defenses, and other cyber, electronic warfare, and space-based enablers. Such support can be supplied by all Allies, including those with limited military capabilities.

486 Gregory Weaver, "The urgent imperative to maintain NATO's nuclear deterrence," *NATO Review* (September 29, 2023).

487 Brad Roberts, "NATO's Nuclear Deterrent: Fit for Purpose?" *SIRIUS (Zeitschri/ für strategische Analysen,*
Journal for Strategic Analysis) 7, no. 3 (September 2023), https://cgsr.llnl.gov/sites/cgsr/files/2024-08/Roberts-SIRIUS-Final.pdf (accessed March 4, 2025); Jakub Graca, Justyna Gotkowska, "NATO's nuclear deterrence: is it time for change?" OSW Commentary, no. 607, Centre for Eastern Studies (June 19, 2024), https://www.osw.waw.pl/sites/default/files/OSW_Commentary_607.pdf (accessed March 13, 2025).

would be a policy shift from the "3 No's",[488] it would need to effectively manage its public narrative regarding Russia's actions. This narrative must emphasize that NATO's responses are aimed at reinforcing stability and peace in Europe, rather than undermining them. One institutional consideration for achieving this is to dismantle existing stovepipes—not only within allied capitals but also in the MC and NPG—while maintaining allied support for nuclear modernization. Continuing to create a common deterrence culture among allies and within NATO institutions will continue to be critical for a "new division of labor" future.

While NATO allies have made strides in coordinating their strategic messaging through summit communiqués, there is an opportunity to not stop there. In my view, the benefits of nuclear deterrence need to be emphasized across various policy landscapes, particularly in areas where adversaries perceive gaps in our messaging. By broadening the scope of their communication efforts, allies can more effectively convey the importance of nuclear deterrence and counteract the narratives that seek to undermine their collective security. For example, there is an opportunity for the United States and its allies to do more together on raising the nuclear IQ of domestic audiences. In addition, the United States could ask allies to take a more proactive role in defending existing nuclear-sharing arrangements, particularly in the context of the NPT Review Conferences and Preparatory Committees. In recent years, both Russia and, increasingly, China have openly questioned and challenged these arrangements in the NPT forums, often fueled by Beijing's concerns that the United States may extend such arrangements to Japan and South Korea. While this rhetoric seeks to undermine the credibility of extended nuclear deterrence, it has, more significantly, weakened alliance cohesion, as allies have largely refrained from publicly denouncing these claims with a single and

488 The NATO-Russia Founding Act, which is still being implemented, assures Russia that NATO members have: no intention, no plan and no reason to deploy nuclear weapons on the territory of new members; no need to change any aspect of NATO's nuclear posture or nuclear policy; and no intention, no plan, and no reason to establish nuclear weapon storage sites on the territory of future new members. While NATO has not formally renounced the Founding Act, according to former NATO Secretary General Jens Stoltenberg in March 2022, "Russia has walked away from the NATO-Russia Founding Act. They have violated it again and again." For a discussion on the future of the NATO-Russia Founding Act, see Nicholas Williams, "NATO-Russia: is there a future?" CERIS-ULB Diplomatic School of Brussels (blog) (May 21, 2021). https://www.ceris.be/blog/nato-russia-is-there-a-future/. Accessed March 14, 2025.

unified voice.[489] As a part of a "new division of labor" future, allies should have a critical responsibility to enhance their strategic messaging regarding nuclear deterrence. A "new division of labor" future should look more seriously at how to effectively manage strategic communications among all U.S. allies as the new strategic context does not allow for weak or ambiguous messages.

The United States has more to do to define its regional nuclear deterrence strategy in the Indo-Pacific. South Korea and Japan are obvious stakeholders in Washington's answers to these questions. And both Tokyo and Seoul want to play a role in formulating those answers. Because of this, there have also been calls for a new division of deterrence labor in the Indo-Pacific,[490] specifically enhanced trilateral security cooperation among Japan, South Korea, and the United States. This was exemplified by the February 15, 2025 joint statement signed by U.S. Secretary of State Marco Rubio, Foreign Minister of Japan Iwaya Takeshi, and Foreign Minister of the Republic of Korea Cho Tae-yul, on the sidelines of the Munich Security Conference.[491] As Matsuda and Park argue, enhanced trilateral cooperation could include closer coordination of U.S.-Japanese naval capabilities to defend the first island chain. South Korea could also invest in ISR, air, missile, and cyber defense capabilities, and participate in military exercises beyond the Korean Peninsula.[492] Moreover, this future could entail increased discussions with allies in Northeast Asia regarding conventional-nuclear integration (CNI), often

489 Along these lines, Germany has refuted similar claims from Russia regarding nuclear sharing arrangements. However, more could still be done from all allies. See Maximilian Hoell, "Why and how the NPT must prepare for an arms control interregnum in the post-New START era," European Leadership Network (February 8, 2024). https://europeanleadershipnetwork.org/commentary/why-and-how-the-npt-must-prepare-for-an-arms-control-interregnum-in-the-post-new-start-era/. Accessed March 14, 2025.

490 For substantive thinking on what a new division of labor between the United States and South Korea would entail, see Manseok Lee, "China's Rise and Nuclear Debate in Korea," in Brad Roberts, ed., *Deterring a Nuclear-Armed North Korea* (Livermore, CA: Center for Global Security Research, May 2023), pp. 38-64.

491 U.S. Department of State, "Joint Statement on the Trilateral United States – Japan – Republic of Korea Meeting in Munich," Media Note, Office of the Spokesperson (February 15, 2025). https://www.state.gov/joint-statement-on-the-trilateral-united-states-japan-republic-of-korea-meeting-in-munich/#:~:text=Strengthening%20Trilateral%20Security%20Cooperation&text=The%20United%20States%20reiterated%20its,strength%2C%20including%20its%20nuclear%20capabilities. Accessed March 3, 2025.

492 Takuya Matsuda and Jaehan Park, "An alliance division of labor in East Asia," War on the Rocks (August 18, 2022). https://warontherocks.com/2022/08/an-alliance-division-of-labor-in-east-asia/. Accessed September 10, 2024.

termed "nuclear-sharing with Asian characteristics."[493] Additionally, exploring nuclear sharing arrangements with allies such as South Korea and Japan could be a potential aspect of the approach, as some have argued for forward-basing U.S. nuclear forces in the Indo-Pacific region and having South Korea become a DCA nation. For example, Frühling and O'Neil note that forward-basing nuclear weapons and stationing DCA in the Indo-Pacific, potentially with South Korean and Japanese crews certified for nuclear missions, could strengthen deterrence. Due to the close proximity of South Korea to North Korea and China to Japan's southern islands, even short-range dual-capable aircraft could play a significant role in enhancing strategic coupling.[494] However, DCA in South Korea is a weak deterrent, as they rely on fixed airbases that are within minutes of flight time from North Korean short-range ballistic missiles. In June 2024, Republican Senator Roger Wicker also called for deploying U.S. tactical nuclear weapons to South Korea, reiterating a proposal he floated in late May 2024. He remarked on the Senate floor, "With our allies South Korea, Japan and Australia, we should discuss nuclear burden-sharing agreements. It's time for them to step forward and join us in nuclear burden-sharing."[495] A "Division of Labor" strategy should seriously explore these options, as the alternative in the coming decade, could be a Seoul or Tokyo that develop their own independent nuclear capability.

As discussed earlier, increasing allied contributions to conventionally support the nuclear mission will likely be vital for this future approach. Areas such as IAMD present significant opportunities for allied coordination. One option is establishing an air and missile defense committee, which could facilitate this collaboration and potentially build on the framework established by pillar two of AUKUS.[496] Moreover, the United States and its allies could also potentially do more to discuss and

493 Others have argued for a more "NATO-like" approach. For a robust discussion of what this could entail, see Brad Roberts, "Living with a Nuclear-Arming North Korea: Deterrence Decisions in a Deteriorating Threat Environment," 38 North (November 2020), pp. 14-18.

494 Stephan Frühling and Andrew O'Neil, "Alliances and nuclear risk: Strengthening US extended deterrence," *Survival* 64, no. 1 (2022), pp. 77-98. https://doi.org/10.1080/00396338.2022.2032969. Accessed March 3, 2025.

495 Lee Hyo-jin, "'Unfeasible' idea of nuclear-armed South Korea resurfaces," *Korea Times* (June 23, 2024). https://www.koreatimes.co.kr/www/nation/2024/06/120_377230.html. Accessed March 3, 2025.

496 John Christianson, Sean Monaghan, and Di Cooke, "AUKUS Pillar Two: Advancing the Capabilities of the United States, United Kingdom, and Australia," Center for Strategic and International Studies (CSIS) Brief (July 10, 2023). https://www.csis.org/analysis/aukus-pillar-two-advancing-capabilities-united-states-united-kingdom-and-australia. Accessed September 2, 2024.

understand allies' roles in strengthening deterrence through deep precision strike, resilience in cyber space, and support to U.S. nuclear deterrence operations. There is significant activity among our allies regarding the conventional strike agenda, which further underscores the need for enhanced collaboration.[497]

Driving Factors and Possible Outcomes

With this approach, it would be important for policymakers to recognize that a new division of labor cannot be a "one size fits all" kind of division. Instead, a new division of labor would need to be well-designed. It is in the United States and its allies' interests to continue to consult on planning, as well as the right mix of capabilities, which must include coherence and CNI. Given the multi-decade development timeframe, it may be a worthy task for the United States and its allies to begin thinking about and discussing future delivery systems and their preferred requirements. To strengthen our CNI efforts, there is room to increase our planning initiatives with allies. This involves fostering greater integration in our operational planning processes. Consultations on these topics could occur at all levels, from action-officer level working groups to senior leadership. At a minimum, as Bunn points out, we should aim to de-conflict our plans to avoid any surprises for our allies.[498]

Moreover, we cannot forget that the adversary gets a vote. It is important to remain clear-eyed about adversaries' capabilities while developing a nuanced understanding of what will effectively deter those threats. A conventional crisis may be the most likely scenario that could lead to nuclear use. But it is also crucial to reiterate what many experts have recognized, that limited nuclear use would not

497 For example, Finland, Poland, The Netherlands Germany are buying JASSM-ER cruise missiles for their F-35s. In the future, U.S. allies may not depend on the United States for targeting. Jaroslaw Adamowski, "Poland buys missiles for hitting targets spotted by radar balloons," *Defense News* (May 29, 2024), https://www.defensenews.com/global/europe/2024/05/29/poland-buys-missiles-for-hitting-targets-spotted-by-radar-balloons/ (accessed September 2, 2024); "American long-range missiles are coming back to Europe," *The Economist* (September 24, 2023), https://www.economist.com/europe/2024/09/24/american-long-range-missiles-are-coming-back-to-europe (accessed September 2, 2024).

498 "Don't surprise your allies" is a recommendation that Elaine Bunn has wisely reiterated for years. See M. Elaine Bunn, "Extending Nuclear Deterrence and Assuring U.S. Allies," in Charles Glaser, Austin Long, and Brian Radzinsky, eds., *Managing U.S. Nuclear Operations in the 21st Century* (Washington, DC: Brookings Institution Press, 2022), pp. 225-226.

signify the end of the conventional fight.[499] Therefore, planning and operating with U.S. allies in a CNI environment is an imperative.[500] A division of labor strategy would likely provide an opportunity for the United States and its allies to further identify and understand how allies can contribute from a planning perspective.

While this approach offers several advantages like reducing strain on U.S. resources, strengthening alliances, and fostering regional ownership, this future is likely to come with some friction that will need to be carefully managed. Notably, coordination challenges likely would arise, along with issues of variable commitment, as not all U.S. allies may be equally willing or capable of stepping up. There is a risk that this could lead to gaps and vulnerabilities in regional deterrence. While the Indo-Pacific theater offers opportunities for rebalancing within alliances, there is a growing debate about whether it is in the United States' interests for South Korea to "go nuclear" and pursue its own capabilities.[501] Some advocate for this approach,[502] noting that South Korea could deter North Korean aggression more effectively, while others contend that it contradicts U.S. and alliance interests, by leading to an arms race in Northeast Asia, prompting Japan and others to pursue similar capabilities.[503] While a "new division of labor" approach does not necessarily

499 Al Mauroni, "Tearing Down the Nuclear Firewall," War on the Rocks (October 15, 2019), https://warontherocks.com/2019/10/tearing-down-the-nuclear-firewall/ (accessed March 13, 2025); John K. Warden, "Limited Nuclear War: The 21st Century Challenge for the United States," Livermore Papers on Global Security No. 4 (Livermore, CA: Center for Global Security Research, July 2018), https://cgsr.llnl.gov/sites/cgsr/files/2024-08/CGSR_LP4-FINAL.pdf (accessed March 14, 2025).

500 This includes planning, operating, and prevailing in a CBRN environment, which is well articulated in the U.S. 2023 Countering WMD Strategy. See U.S. Department of Defense, *2023 Strategy for Countering Weapons of Mass Destruction (2023)*, pp. viii, 8, 11-12. https://media.defense.gov/2023/Sep/28/2003310413/-1/-1/1/2023_STRATEGY_FOR_COUNTERING_WEAPONS_OF_MASS_DESTRUCTION.PDF. Accessed March 17, 2025.

501 Min-hyung Kim, "Is Non-Nuclearization Sustainable? Explaining South Korea's Strategic Choices," *The Washington Quarterly* 46, no. 2 (July 2023), pp. 127–140. https://doi.org/10.1080/0163660X.2023.2226530. Accessed March 14, 2025.

502 Robert E. Kelly and Min-hyung Kim, "Why South Korea Should Go Nuclear: The Bomb is the Best Way to Contain the Threat from the North," *Foreign Affairs* (December 30, 2024). https://www.foreignaffairs.com/north-korea/why-south-korea-should-go-nuclear-kelly-kim?utm_medium=newsletters&utm_source=fatoday&utm_campaign=Why%20South%20Korea%20Should%20Go%20Nuclear&utm_content=20251230&utm_term=EDZZZ003ZX. Accessed December 30, 2024.

503 Bruce Klingner, "Crisis of credibility: The need to strengthen U.S. extended deterrence in Asia," Backgrounder No. 3751 (Washington, DC: The Heritage Foundation, Asian Studies Center, February 23, 2023). https://www.heritage.org/sites/default/files/2023-02/BG3751.pdf. Accessed September 2, 2024.

result in inevitable friendly proliferation, it raises the issue of whether the United States would choose to assist specific allies, such as the ROK, in developing their own nuclear capabilities. If this path is pursued, the United States would need to determine whether to support allies in this effort or to continue upholding a model of technological dependence. This decision would have significant implications not only for deterrence but also for the nonproliferation regime. Therefore, in the coming decade, policymakers may need to grapple with whether this represents a viable option for a "new division of labor," or if alternative posture and capability modifications would suffice for extended deterrence and assurance in the region.

Chapter 6: Red's Potential Future Strategy: Russia and China Extending Nuclear Deterrence

One potential scenario that seems far-fetched today is examining what it could look like if Russia and/or China extended their nuclear deterrents to other nations. A Russian-led or Chinese-led alliance that extends nuclear deterrence could take various forms, ranging from alliances of convenience to "ironclad" commitments, like those of the United States. These alliances might focus on collective defense purposes, resembling NATO's Article 5, or they could involve bilateral formal arrangements, like the United States' relationships with South Korea, Japan, and Australia.

Similar to the discussion in Chapter 1 about why the United States extends deterrence, it is equally crucial to explore why Russia and/or China might choose to extend their nuclear deterrents to other countries. Extending nuclear deterrence to allies is a strategic decision that can serve multiple objectives for nations like Russia and China. By providing a security guarantee, Russia or China could strengthen political and military alliances, thereby enhancing their geopolitical influence in key regions. This reliance on nuclear capabilities for security not only solidifies these alliances but also serves to counter U.S. influence, acting as a counterbalance to American military presence in areas where Russia or China seek to assert their dominance.

Extending deterrence could shape regional politics and the balance of power. By doing so, Russia or China may influence the foreign and defense policies of their allies, aligning them more closely with their strategic interests and objectives. Extending nuclear deterrence could also enhance national prestige and demonstrate military capability, appealing to domestic audiences and reinforcing the legitimacy of Moscow's and Beijing's governments. For countries like North Korea, a nuclear guarantee from Russia or China could bolster regime stability by providing a sense of security against external threats. Ultimately, this extension of deterrence could serve as a critical tool for geopolitical signaling, conveying to the international community—particularly the United States and its allies—the strength and reach of Russia's or China's military capabilities, in line with their strategic ambitions.

While the specifics remain speculative, these possibilities should not be ignored. This is a future challenge that the United States must consider when shaping its extended nuclear deterrence strategy. Table 12 summarizes how each alternative strategy discussed in Chapter 5 could potentially address this issue. Each strategy involves trade-offs in effectiveness, resource allocation, and alliance dynamics.

Table 12. Options to Counter Red Extending Nuclear Deterrence

Strategy Option	Addressing Russia/China Extending Nuclear Deterrence
Strategy 1: Scaling Back Commitments	Reduced U.S. involvement in extended deterrence could indirectly counter Russia/China by encouraging regional allies to develop independent deterrence capabilities. However, it risks weakening U.S. influence and alliance cohesion.
Strategy 2: Expanding Commitments	Increasing U.S. nuclear guarantees and military presence could signal resolve to adversaries. This could deter Russia/China by demonstrating the U.S. commitment to countering their actions and reassuring allies, preventing them from seeking alternative security arrangements.
Strategy 3: Tailoring Existing Extended Deterrence	Adapts current deterrence measures to specific regional threats posed by Russia/China. This approach could ensure flexibility and precision in addressing their extended deterrence strategies without overextending U.S. resources.
Strategy 4: Creating a New Division of Labor	Encourages allies to take on greater roles in their own defense while the U.S. provides strategic support. This could counter Russia/China by fostering stronger regional coalitions, complicating adversary calculus, making it harder for adversaries to exploit perceived vulnerabilities in extended deterrence.

The Possibility of Russia Extending Nuclear Deterrence

On September 25, 2024, President Putin provided insights into changes to Russia's long-anticipated new nuclear doctrine.[504] He indicated that the nuclear mission was being "expanded" and outlined numerous changes from the previous

504 For a summary of the doctrine changes see Heather Williams, "Why Russia Is Changing Its Nuclear Doctrine Now," Center for Strategic and International Studies (September 27, 2024). https://www.csis.org/analysis/why-russia-changing-its-nuclear-doctrine-now. Accessed December 20, 2024.

2020 doctrine.[505] Of note, rather than referring to Russia's "allies" more broadly, the doctrine explicitly mentions Belarus as protected by the Russian nuclear umbrella. Putin said in his statement, "We reserve the right to use nuclear weapons in the event of aggression against Russia and Belarus as a member of the Union State."[506] Russia has not explicitly mentioned Belarus in its doctrine until now.

Belarus serves as a notable example of the Russian model for extended nuclear deterrence, particularly in light of Russia's joint military drills[507] and the movements of nuclear weapons into the country.[508] This military cooperation goes back decades, and arguably, Belarus has been covered by Russia's extended deterrence as part of the Collective Security Treaty Organization. In addition, on February 5, 2000, Belarusian President Alexander Lukashenko indicated that Russia had agreed to extend its nuclear umbrella to Belarus.[509] However, it wasn't until 23 years later when the nuclear landscape shifted slightly with President Putin's announcement that Russia would station tactical nuclear weapons in Belarus.[510]

> The groundwork had already been laid for this move. In February 2022, President Lukashenko modified the country's constitution to eliminate its non-nuclear status,[511] and in June 2022, Putin agreed to provide

505 Francesca Ebel, Natalia Abbakumova, Robyn Dixon, and Catherine Belton, "Russia's nuclear doctrine to include attacks on nonnuclear states," *The Washington Post* (September 25, 2024). https://www.washingtonpost.com/world/2024/09/25/putin-nuclear-deterrent-ukraine-threat/. Accessed December 20, 2024.

506 Xiaodon Liang and Doniyor Mutalov, "Putin Previews Changes to Nuclear Policy," Arms Control Association (November 2024). https://www.armscontrol.org/act/2024-11/news/putin-previews-changes-nuclear-policy. Accessed December 20, 2024.

507 "Russian military begins 3rd round of drills to train troops in tactical nuclear weapons," AP News (July 31, 2024). https://apnews.com/article/russia-nuclear-drills-putin-ukraine-war-3e24676fcebbb8ef4449461d7b93425c. Accessed December 20, 2024.

508 Jack Detsch and Robbie Gramer, "Russia's Nuclear Weapons Are Now in Belarus," *Foreign Policy* (March 14, 2024). https://foreignpolicy.com/2024/03/14/russia-nuclear-weapons-belarus-putin/. Accessed December 20, 2024.

509 "Russia Extends Nuclear Umbrella to Belarus," Arms Control Association (March 2000). https://www.armscontrol.org/act/2000-03/news-briefs/russia-extends-nuclear-umbrella-belarus. Accessed December 20, 2024.

510 "Путин: заявление Британии послужило поводом для переговоров с Лукашенко, [Putin: Britain's statement served as a pretext for talks with Lukashenko]," *RIA Novosti* (March 24, 2023). https://ria.ru/20230325/putin-1860659321.html. Accessed December 20, 2024.

511 "Belarus referendum approves proposal to renounce non-nuclear status – agencies," Reuters (February 27, 2022). https://www.reuters.com/world/europe/launchpad-russias-assault-ukraine-belarus-holds-referendum-renounce-non-nuclear-2022-02-27/

> Belarus with dual-capable delivery systems.[512] In his justification for the deployment of nuclear weapons to Belarus, Putin pointed to NATO's ongoing nuclear mission as precedent and justification. As President Putin noted,
>
> We are not handing over [the weapons]. And the U.S. does not hand [them] over to its allies. We're basically doing the same thing they've been doing for a decade. They have allies in certain countries and they train . . . their crews. We are going to do the same thing.[513]

In March 2024, Russia moved tactical nuclear weapons into Belarus, several hundred miles closer to NATO territory. While this certainly has political significance as it reinforces the Belarusian regime by providing a security guarantee, from a military and operational perspective, it has been less of a concern.[514] The strategic move, which Putin framed as a warning to the West,[515] aimed to strengthen Russia's influence in the region while attempting to ramp up pressure on NATO's Eastern flank. While the deployment of weapons follows years of nuclear saber-rattling intended to scare the West into not supporting Ukraine, the geopolitical implications have been less than profound. Though it remains to be seen how this unfolds, as of 2025, the presence of Russian nuclear capabilities in Belarus has yet to heighten tensions with NATO. While some Baltic countries have warned that the risk of Western inaction is high,[516] top NATO officials have also insisted that the move

512 "Meeting with President of Belarus Alexander Lukashenko," Office of the President of Russia (June 25, 2022). http://www.en.kremlin.ru/events/president/transcripts/68702. Accessed December 20, 2024.

513 Heather Williams, Kelsey Hartigan, Lachlan MacKenzie, and Reja Younis, "Deter and Divide: Russia's Nuclear Rhetoric and Escalation Risks in Ukraine," Center for Strategic and International Studies.

514 Jack Detsch and Robbie Gramer, "Russia's Nuclear Weapons Are Now in Belarus," *Foreign Policy* (March 14, 2024).

515 Andrew Osborn, "Putin says Russia put nuclear bombs in Belarus as warning to West," Reuters (June 16, 2023). https://www.reuters.com/world/europe/putin-says-russia-positions-nuclear-bombs-belarus-warning-west-2023-06-16/. Accessed December 20, 2024.

516 As Lithuania's defense minister, Arvydas Anusauskas, noted, "We would like to see a harder response on that…If [the] Russians move nuclear weapons closer to us, we need to move as well." Jack Detsch and Robbie Gramer, "Russia's Nuclear Weapons Are Now in Belarus," *Foreign Policy* (March 14, 2024).

doesn't drastically alter the nature of Russia's military threats to NATO.[517] However, as Barros has argued, Moscow's efforts in Belarus augment Russia's military and economic capabilities, further enabling them to pursue its revanchist geopolitical objectives against the United States and NATO.[518]

While this may not have immediately altered NATO's strategic calculus or posture, the collaboration between Russia and Belarus, along with the potential involvement of other countries, could have significant operational and military implications in the future. In the coming decade, the United States and its allies should not rule out Russia and Belarus further enhancing their military integration and strategic positioning in Eastern Europe. Their combined forces not only could improve Moscow's logistics and enable rapid deployment, but also enhance its gray zone capabilities, including cyber operations and disinformation tactics. Couple these capabilities with deployments of Russian tactical nuclear weapons in Belarus, and the security landscape for the United States and NATO could be further complicated, potentially leading to new threats. Therefore, it is in the United States and NATO allies' interest to further plan for nuclear-related scenarios where Moscow seeks to leverage Belarus as a second center of decisionmaking.

In addition, it appears that North Korea is now covered by a Russian nuclear umbrella. The Russia-North Korea Treaty on Comprehensive Strategic Partnership was signed in June 2024 and came into force in December 2024. While the treaty does not explicitly state a Russian extended nuclear deterrent commitment to North Korea, Article 4 does suggest there is an implicit guarantee. According to Article 4, should either nation "put in a state of war by an armed invasion," the other will "provide military and other assistance with all means in its possession without delay" in accordance "with Article 51 of the UN Charter and the laws of the DPRK and the Russian Federation."[519] Some analysts have noted that the treaty is a mirror to the U.S.-ROK alliance, especially as it permits all available means

517 In addition, former NATO deputy secretary general, Rose Gottemoeller, noted, "The Russians can reach any place in NATO with nuclear missiles with what they have on their own territory. It does not change the threat environment at all. So, it is purely a political message. See Ibid.

518 George Barros, *Russia's Quiet Conquest: Belarus* (Washington, DC: Institute for the Study of War, January 15, 2025). https://www.understandingwar.org/backgrounder/russias-quiet-conquest-belarus. Accessed January 16, 2025.

519 Helen Regan, Gawon Bae, and Yoonjung Seo, "North Korea says Kim and Putin's defense pact permits all available means to assist each other if either nation attacked," CNN (June 20, 2024). https://edition.cnn.com/2024/06/20/asia/russia-putin-kim-deal-military-assistance-intl-hnk/index.html. Accessed March 17, 2025.

to assist each other if either nation attacked.[520] The clause allowing for "military and other assistance with all means in its possession" strongly implies that Russia could provide nuclear or advanced military support to North Korea in the event of conflict, especially given Russia's status as a nuclear power and its growing strategic alignment with Pyongyang. Because of this, the Russia and North Korea military and defense pact could likely have significant consequences in the coming decade.

Importantly, the treaty also includes provisions for "joint activities to strengthen defense capabilities" and "tactical and strategic cooperation aimed at global strategic stability and a new just and equal international order." It will be critical for the United States and its allies to monitor whether these provisions extend to the exchange of military technology, including, as some suggest, technical assistance with Pyongyang's missile and nuclear weapons programs.[521]

Iran and Russia's current partnership is more flexible, allowing both parties freedom to navigate the international landscape. Historically, formal alliances have not appealed to either Iran or Russia, as they have criticized such arrangements as relics of the Cold War, still endorsed and propagated by the collective West.[522] Instead, in January 2025, the two nations outlined a roadmap for their bilateral relations, emphasizing mutual respect for sovereignty, the promotion of a fair multipolar world order, and a critique of the West's irresponsible and detrimental behavior.[523]

520 Zorgit Dashdorj, "The global ramifications of the Russia-North Korea pac," GIS Reports (January 14, 2025). https://www.gisreportsonline.com/r/russia-north-korea-treaty/. Accessed March 17, 2025; Lee Je-hun, "N. Korea's new pact with Russia is 'mirror image' of Yoon's alliance with US," *Hankyoreh* (June 21, 2024). https://english.hani.co.kr/arti/english_edition/e_northkorea/1145933.html. Accessed March 17, 2025.

521 Robert Peters, "The Potential for Russia to Supercharge North Korea's Nuclear and Missile Program," Heritage Foundation (October 22, 2024). https://www.heritage.org/sites/default/files/2024-10/BG3856.pdf. Accessed December 20, 2024.

522 "Iran opposes NATO expansion, says foreign minister," TASS (February 27, 2023). https://tass.com/world/1582033. Accessed March 17, 2025.

523 For more on this relationship, see Hanna Notte and Jim Lamson, "The Uncomfortable Reality of Russia and Iran's New Defense Relationship," War on the Rocks (July 24, 2024). https://warontherocks.com/2024/07/the-uncomfortable-reality-of-russia-and-irans-new-defense-relationship/ (accessed March 17, 2025); Max Bergmann, John Alterman, and Hanna Notte, "Transcript of Event: Understanding the Growing Collaboration Between Russia and Iran," Center for Strategic and International Studies (June 12, 2024), https://www.csis.org/analysis/understanding-growing-collaboration-between-russia-and-iran (accessed March 17, 2025); Javad Heiran-Nia, "The Roots of Increasing Military Cooperation Between Iran and Russia," Stimson Center (October 16, 2024), https://www.stimson.org/2024/the-roots-of-increasing-military-cooperation-between-iran-and-russia/ (accessed March 17, 2025).

The Possibility of China Extending Its Nuclear Deterrent

China does not actively extend nuclear deterrence in the same way as the United States, as its stated nuclear doctrine focuses primarily on "assured retaliation" to deter attacks against its own territory, meaning it does not explicitly guarantee the nuclear defense of allies, and instead maintains a policy of no-first-use of nuclear weapons.[524] However, as previously discussed, the conditions of its no-first-use policy are ambiguous,[525] and its growing nuclear arsenal and modernization efforts are increasingly perceived as having the potential to deter adversaries in the region,[526] which could potentially be interpreted as a form of de facto extended deterrence.[527]

This raises the question of whether China is already extending its deterrent to North Korea. While Beijing is an enabler of North Korean aggression, there has been no explicit or implicit guarantee to Pyongyang that the PLA would use military means, including nuclear, in defense of the DPRK. Still, it is worth noting the dynamic relationship between China and North Korea.

Since the fall of the Soviet Union, China has been North Korea's sole supporter. While China constitutes the vast majority of the DPRK's external trade and North Korea depends on the PRC for energy, fertilizer, and food imports, China has thus

524 The PRC's approach to nuclear force includes a declaratory no-first-use (NFU) policy, stating it will never use nuclear weapons first at any time under any circumstances, including unconditionally not using or threatening to use of nuclear weapons against any non-nuclear-weapon state or in nuclear-weapon-free zones. See U.S. Department of Defense, *Military and Security Developments Involving the People's Republic of China, 2024,* Annual Report to Congress, Office of the Secretary of Defense (2024), p. 102.

525 Despite publicizing this policy, the PRC's nuclear strategy probably includes consideration of a nuclear first strike in response to nonnuclear attacks that PRC leaders perceive as threatening the viability of the PRC's nuclear forces or C2, or that approximate the strategic effects of a nuclear strike. Beijing probably would consider nuclear first use if a conventional military defeat in Taiwan gravely threatened CCP regime survival. See U.S. Department of Defense, *Military and Security Developments Involving the People's Republic of China, 2024,* Annual Report to Congress, Office of the Secretary of Defense (2024), p. 102.

526 David C. Logan and Phillip C. Saunders, "Discerning the Drivers of China's Nuclear Force Development: Models, Indicators, and Data," China Strategic Perspectives 18 (Washington, DC: National Defense University Press, July 2023). https://ndupress.ndu.edu/Portals/68/Documents/stratperspective/china/chinaPerspectives-18.pdf?ver=vfq7ubtJyhPAKNAaO21jkQ%3d%3d. Accessed December 20, 2024.

527 Historically, China has maintained a relatively small nuclear arsenal based on the concept of "minimum deterrence," aiming to have enough nuclear weapons to deter a potential attack. However, given its growing nuclear program, it could potentially have the capability to deter an attack on an ally, if it chose to do so.

far refused to provide North Korea with nuclear-weapons technology and expertise. China has supported certain sanctions targeting Pyongyang's nuclear program. China is concerned that an unstable nuclear North Korea could escalate tensions, prompting the United States to strengthen its military presence in the region and potentially encouraging Japan and South Korea to develop their own nuclear arsenals—outcomes that, according to analysts, would not align with Beijing's interests.[528]

Moreover, as the 2024 DOD China Power Report highlighted, the possibility that Russia might transfer weapons technology or dual-use items, which could support Pyongyang's nuclear weapons program, runs counter to Beijing's stated opposition to nuclear weapons on the Peninsula.[529] While distancing itself from Russia-North Korea cooperation, the PRC has deepened engagement with Pyongyang, in December 2023 holding the first high-level PRC-North Korea meeting since 2019 and announcing that 2024 would be a "Year of Friendship" between the PRC and North Korea. These efforts are probably an effort to counterbalance Russian engagement with the DPRK.[530]

Potential Impact on U.S. Alliances

Though this alternative scenario may seem implausible, the United States has been surprised in the past and will be again in the future. If this scenario ever became reality, it would likely alter U.S. extended deterrence and assurance requirements, requiring the United States and its allies to reassess and potentially adapt. Some considerations include whether the United States commitments to NATO and its allies in the Indo-Pacific remain credible in the face of Russian and Chinese extended deterrence commitments. The extension of nuclear deterrence by Russia and China could lead to increased tensions in regions like Eastern Europe and the South China Sea, as U.S. allies may feel increasingly threatened. This could

528 Bruce W. Bennett and Diana Y. Myers, *North Korean Nuclear Weapons Pose an Existential Threat to China* (Santa Monica, CA: RAND Corporation, July 13, 2021). https://www.rand.org/pubs/commentary/2021/07/north-korean-nuclear-weapons-pose-an-existential-threat.html. Accessed March 17, 2025.

529 U.S. Department of Defense, *Military and Security Developments Involving the People's Republic of China, 2024,* Annual Report to Congress, Office of the Secretary of Defense (2024), p. 15.

530 Ibid.

especially be true if Moscow or Beijing decided to forward deploy any of its nuclear forces on the territory of allies located near U.S. allied countries.

The extension of nuclear deterrence by Russia and China could alter the strategic landscape, requiring the United States to adapt its deterrence strategies and diplomatic approaches among its alliance networks. The United States could seek to strengthen its alliances through new treaties or defense agreements, possibly including nuclear-sharing arrangements with additional allies. However, risks remain with that choice. With the presence of multiple nuclear powers extending deterrence, this ultimately would likely lead to another layer of potential miscalculations or misunderstandings, further complicating peacetime, crisis, or conflict dynamics.

Chapter 7: The Case for a U.S. Extended Nuclear Deterrence Strategy Fit for Purpose

The future of extended nuclear deterrence appears to hinge on four primary pathways: the United States could scale back its commitments, reducing its global security role; it could expand its guarantees to additional countries, taking on greater responsibilities; it could maintain the status quo, preserving its current approach; or it could establish a new division of labor amongst U.S. allies. Each of these options carries distinct strategic implications, risks, and tradeoffs, reflecting the complex and evolving nature of the nuclear landscape.

However, none of these pathways sufficiently tackle the central challenge underlying the need for a new extended nuclear deterrence strategy: the two-nuclear-peer problem. If the United States cannot maintain conventional superiority in two theaters simultaneously, it will face a difficult choice—either to abandon one theater (and its associated allies) or to rely more heavily on nuclear weapons to offset conventional inferiority. This represents a critical strategic dilemma that the United States must confront—and confront urgently—especially since we are not currently developing the nuclear force required to offset conventional inferiority in either theater.[531]

History demonstrates the necessity of adaptation, and the current state of U.S. extended nuclear deterrence strategy underscores this need. The U.S. strategy has not kept pace with the rapidly evolving global security environment. While some progress has been made, significant gaps persist. Over the past three administrations, a "steady as she goes" approach has prevailed, but in today's multipolar and emerging two-peer world, this approach is increasingly untenable. Business as usual is no longer an option, and a reassessment of extended nuclear deterrence is imperative.

531 The 2023 Strategic Posture Commission emphasized that "additional U.S. theater nuclear capabilities will be necessary in both Europe and the Indo-Pacific regions to deter adversary nuclear use and offset local conventional superiority." However, an important strategic decision remains regarding regional nuclear deterrence architecture. See Congressional Commission on the Strategic Posture of the United States, *America's Strategic Posture, Final Report* (October 2023), pp. 35, 98.

Allies are eager to do more, and the United States needs them to assume larger roles as its resources are finite and its capabilities stretched across multiple regions. While initial discussions about allies taking on greater responsibilities (such as increasing defense spending[532]) have begun, they have yet to lead to meaningful rebalancing. Institutionalizing this new division of labor over the coming decade will be essential to sustaining an effective extended nuclear deterrence strategy. This chapter analyzes the steps the United States and its allies must take to maintain credible extended nuclear deterrence in a two-peer environment. It highlights key considerations for reshaping U.S. extended deterrence over the next decade, emphasizing a clear division of labor among allies and how to mitigate the worst potential outcomes.

To address these challenges, two critical questions must guide U.S. strategy:

1. What are the requirements for extended nuclear deterrence in a multipolar world, especially to sustain a division of labor?
2. What is the best option for the United States to prevent the worst outcomes?

Meeting the Challenge: Extended Nuclear Deterrence Requirements in a Multipolar World

There are several practical steps the United States and its allies could pursue to meet the changing requirements for a multipolar security environment. These are key choices, which will determine whether deterrence remains credible in the face of two nuclear peers and whether the United States and its allies can effectively respond to the emerged and emerging threats. Failing to take these steps promptly risks undermining deterrence, weakening alliances, and leaving the United States and its allies unprepared for future crises or conflicts in the coming decade.

First, allies in both Europe and the Indo-Pacific should adopt a comprehensive view of the challenges posed by two nuclear peers—Russia and China. This requires a shared understanding of the threat environment and a willingness to assume greater responsibilities within a rebalanced division of labor. Additionally, allies must recognize that the challenges posed by two nuclear peers are not confined to specific regions. For example, Russia's actions in Europe have security implications

532 Rikard Jozwiak, "Will the U.S. Leave NATO? Officials Push Back Against Rising Doubts," *Radio Free Europe Radio Liberty* (March 3, 2025). https://www.rferl.org/a/nato-future-us-commitment-brussels-ukraine-pushback/33334657.html. Accessed March 3, 2025.

for Indo-Pacific allies like South Korea, Japan, and Australia. This interdependence underscores the need for closer cooperation and coordination to address shared challenges, particularly as adversaries increasingly integrate nuclear weapons into their strategies.

Second, U.S. policymakers should recognize that U.S. alliances remain essential to extended deterrence because they provide critical capabilities and amplify U.S. strength in the face of finite resources. While the United States has significant military capacity, it cannot realistically handle two simultaneous wars with two-nuclear-peers—or even one nuclear peer and one non-peer—without robust allied support. As Roberts has argued, in a world where opportunistic aggression by a second nuclear-armed adversary is a real threat, allies must be able to compensate when U.S. attention and military forces are redirected to other regions.[533] This raises the critical question: what support, contributions, or commitments can we expect from our allies and partners?

To address this, a third practical step is required: the United States and its allies must assess their collective capabilities, identify gaps, and determine where allies can contribute more effectively. Rather than focusing on the percentage of GDP, they should determine the specific forces required, their quantities, and deployment timelines. A clear division of labor must then be established, specifying which countries will provide which forces according to the agreed schedule. This process requires forthright discussions with allies about capability gaps and the need for a complementary division of labor. It also requires a holistic view of capability development in Europe and Asia, assessing critical U.S. assets for each theater while encouraging allies to contribute meaningfully within their own contexts. Given that China is likely to possess more than 1,000 operational nuclear warheads in the first half of this decade, these discussions with allies in the Indo-Pacific should begin now. For example, if Washington decided to implement flexible stationing of U.S. nuclear weapons during times of crisis, it would be essential for the United States to collaborate with allied nations to establish the necessary infrastructure now and engage in detailed discussions about the required capabilities.

Moreover, part of these discussions should also include a focus on the lack of sufficient limited nuclear response options for a regional war, and how allies may be able to contribute to addressing this problem set. For example, in the European context, in the coming decade, the UK or France could potentially provide short- and

533 Brad Roberts, "The Next Chapter in US Nuclear Policy," *The Washington Quarterly* 47, no. 2 (July 2024), p. 16.

medium-range systems deployable to regions in Europe during a crisis. Additionally, strengthening deterrence could involve expanding DCA and CSNO nations, enhancing CNI, or deploying ground-based intermediate-range U.S. nuclear systems in Europe (and Asia), although the latter would potentially be politically challenging. While the current DCA nations are politically and historically significant and should remain in place, this future strategy presents an opportunity to include additional European nations in the nuclear mission. This rebalanced approach would not diminish U.S. commitment but would reflect the reality that allies must contribute more conventional capabilities and optimize their military investments. This is likely to prove especially relevant in the Indo-Pacific, where the United States may increasingly depend on allied support to counter PRC actions.[534]

Fourth, from my perspective, procurement decisions may need to be made now, and a well-designed division of labor must be implemented without delay as the threat environment does not provide us with the luxury of waiting. Procurement decisions require long lead times—often five to 10 years—making it imperative to identify short-, medium-, and long-term priorities now. These priorities should focus on conventional and other domains, such as cyber, space, and missile defense. While conventional weapons cannot replace nuclear weapons, they can be a complementary capability. By leveraging the capabilities of these allies, the United States can free up vital resources that would otherwise be tied down in the European region, allowing for a more robust response to Asia-Pacific contingencies, and vice versa. In the same light, the United States should continue to reassess the requirements for its nuclear forces to address anticipated security changes, with a focus on regional deterrence.

Therefore, to prepare for the demands of a global, potentially protracted conflict, U.S. allies must orient and posture themselves around this new baseline. A global conflict would not simply be multi-regional but interconnected, requiring allies to adopt a comprehensive approach to deterrence and warfighting.[535] This

534 As Pillsbury wrote in 2020, "The challenges…in the Indo-Pacific extend beyond what any single country can address alone." See Michael Pillsbury, "Chapter 2: The Trump Administration's Indo-Pacific Strategy," in Leah Bitounis and Jonathan Price, eds., *The Struggle for Power: U.S.-China Relations in the 21st Century* (Washington, DC: Aspen Strategy Group, Aspen Institute, January 24, 2020), pp. 31-38. https://www.aspeninstitute.org/wp-content/uploads/2020/01/TheStruggleForPower.pdf. Accessed March 17, 2025.

535 According to the Joint Staff's Joint Warfighting Concept, "the changing character of war and geopolitical landscape require an integrated and interoperable, multi-domain-capable, joint and coalition force to demonstrate credible deterrence." See U.S. Department of Defense, Joint Chiefs of Staff, "Joint Warfighting," Joint Publication, Vol. 1 (August 27, 2023), p. i. https://keystone.ndu.edu/Portals/86/Joint%20Warfighting.pdf. Accessed March 14, 2025.

means prioritizing capabilities that ensure the ability to prevail in both crisis and war. In a world of finite resources, the United States and its allies must make deliberate choices about where to invest their efforts. This requires identifying the "right mix of capabilities" rather than pursuing a broad and unsustainable expansion of military assets. Drawing on the insights of strategist Andrew Marshall, the focus should be on steering competition toward domains where adversaries are less likely to succeed while protecting enduring U.S. and allied advantages. For example, investments in emerging technologies such as cyber capabilities, space systems, and missile defenses could provide asymmetric advantages over adversaries.[536] At the same time, the United States and its allies must decide where not to invest, ensuring that resources are concentrated on the most promising and strategically significant areas. This prioritization could enhance the overall effectiveness of deterrence while avoiding unnecessary expenditures on capabilities that do not align with long-term objectives.

Fifth, the U.S. force structure must account for allied contributions, ensuring that roles and responsibilities are clearly defined in advance of potential conflicts. For example, the 2024 National Defense Strategy Commission emphasizes the importance of joint strategic and operational planning with allies to prepare for the most challenging scenarios.[537] This includes identifying and assigning specific roles and missions to enhance collective preparedness. Peacetime planning with allies would serve as a powerful tool, while the United States and its allies should also focus on how to signal during intra-war deterrence, ensuring that adversaries are dissuaded from escalating further once a conflict begins.

One critical area for improvement is interoperability. Achieving coherence across domains—cyber, space, conventional, and nuclear—is essential for effective deterrence. Historical examples, such as NATO's Cold War posture, highlight the importance of interoperability among allied forces. NATO's success depended on joint operations, compatible communication systems, and shared logistical frameworks. Allied technologies must be able to communicate seamlessly, and cross-training among U.S. and allied forces could be expanded. More co-production agreements and a stronger defense industrial base (DIB) are also essential to

536 For an analysis on extended deterrence and emerging technologies, see Rupal Mehta, "Extended deterrence and assurance in an emerging technology environment," *Journal of Strategic Studies* 44, no. 7 (2019), pp. 958-952. https://doi.org/10.1080/01402390.2019.1621173. Accessed March 14, 2025.

537 National Defense Strategy Commission, *Report of the Commission on the National Defense Strategy* (July 29, 2024), p. 28.

sustaining a credible deterrence posture. For example, a more agile and responsive DIB would enable allies to quickly adapt to changing threat environments and maintain the technological edge necessary for deterrence.[538] Moreover, realistic exercising and joint planning efforts should continue so interoperability among allied forces is enhanced, ensuring they can operate seamlessly together in times of crisis.

Along these lines, allies should also enhance existing training and exercise programs to account for a possible nuclear dimension to an ongoing conventional conflict. In the Indo-Pacific, while the Korea-U.S.-Japan trilateral cooperation is primarily intended to maintain the status quo in East Asia in the face of the increasing threats posed by China and North Korea, the deep and institutionalized cooperation among the three countries' militaries and security institutions could serve as a firmly established area of cooperation that could be sustained. The three countries could establish the tradition of regular trilateral exercises in surface warfare, anti-submarine warfare, search and rescue, missile defense, and air operations to increase interoperability and coordination of roles and ways of operation over time. And, as agreed to in 2024, the three countries could implement regular multi-domain military exercises.[539] There are risks of letting the trilateral alliance weaken. Such a move could signal disunity among the United States and its allies on East Asian security, emboldening China, North Korea, and Russia. More critically, it could undermine U.S. power projection in the region and erode confidence in U.S. commitments, pushing allies to seek alternative strategies—whether through new partnerships, concessions to China, or pursuing nuclear weapons.

Sixth, a robust communication strategy is necessary to ensure that statements with allies are clear and consistent, avoiding contradictions that could undermine regional deterrence efforts. The United States and its allies could focus on making strategic communications more global, considering the interdependencies among

538 For a more comprehensive discussion on what NATO can do in these areas, refer to General Lavigne, Supreme Allied Commander Transformation's 2023 article. Philippe Lavigne, "Embracing Change: A Sense of Urgency," *Joint Force Quarterly 111* (October 30, 2023). https://ndupress.ndu.edu/Portals/68/Documents/jfq/jfq-111/jfq-111_25-31_Lavigne.pdf?ver=ggnzk36Wtq6gxEZgLOC27w%3d%3d. Accessed March 17, 2025.

539 Wooseon Choi, "New Horizons in Korea-U.S.-Japan Trilateral Cooperation," Center for Strategic and International Studies (June 27, 2024); Dzirhan Mahadzir, "U.S., Japan and Korea Commit to New Multi-Domain 'Freedom Edge' Exercise Series," U.S. Naval Institute News (June 3, 2024), https://news.usni.org/2024/06/03/u-s-japan-and-korea-commit-to-new-multi-domain-freedom-edge-exercise-series (accessed October 10, 2024).

all theaters. The United States and its allies should specifically reflect on signaling and messaging lessons learned from the War in Ukraine, as well as the port visits to South Korea and trilateral military exercises to consider how intra-war signaling might differ in various theaters. The United States and its allies must begin to address how intra-war signaling should evolve and determine how to effectively signal in the second theater. This is a critical area that warrants further analysis.

Concluding Thoughts: Lessons for the Future of U.S. Extended Nuclear Deterrence

The lessons learned from decades of U.S. extended nuclear deterrence practices reveal a complex landscape of both successes and shortcomings. Extending deterrence and assuring allies have always been challenging policy endeavors and will remain so. Historically, the United States has faced persistent challenges in effectively implementing this strategy. Since the end of the Cold War, it has continuously adjusted and adapted its alliance commitments across different regions globally, particularly in Europe and East Asia, where it has made significant investments since the conclusion of the World War II. The United States has never fully achieved a "perfect" implementation of this strategy, and the extended nuclear deterrence enterprise is subject to constant shocks, as alliances ebb and flow, and external factors frequently necessitate adjustments.

One of the key successes of extended nuclear deterrence has been its ability to adapt to shifting geopolitical realities. During the Cold War, the United States established a credible deterrent against the Soviet Union by integrating its nuclear and conventional forces with the defense strategies of NATO allies. In the post-Cold War period, extended nuclear deterrence took on a less prominent role as the immediate threat of nuclear conflict receded. However, the resurgence of great-power competition, particularly with Russia and China, has brought extended nuclear deterrence back to the forefront of U.S. strategy. This renewed salience reflects the growing urgency of addressing regional deterrence challenges, from Russia's aggression in Europe to China's assertiveness in the Indo-Pacific. U.S. allies are now at the center of these challenges, often finding themselves in the nuclear crosshairs of our adversaries.

Despite its successes, U.S. extended nuclear deterrence has not been without its shortcomings. At times, the United States has struggled to maintain the credibility of its commitments, particularly when domestic political priorities have clashed with alliance obligations. For example, debates over defense spending, modernization

of the nuclear arsenal, and the willingness to use force have occasionally raised doubts among allies about the reliability of U.S. guarantees. Additionally, the United States has sometimes underestimated the importance of alliance cohesion, failing to adequately consult with or address the concerns of its partners. These missteps have highlighted the need for a more collaborative approach to extended deterrence—one that recognizes the agency and contributions of allies while maintaining global U.S. leadership.

Public debates in the United States and among its allies have often assumed that U.S. extended deterrence commitments will remain unchanged, despite the increasingly complex security environment of the twenty-first century. This assumption overlooks the evolving nature of threats, technologies, and geopolitical dynamics that demand a reassessment of traditional deterrence strategies. As Mehta aptly questioned in 2019, "Should we assume that the manner in which the United States manages its defensive alliance commitments in the twenty-first century will rely on the same set of capabilities and means that it employed in the twentieth century?"[540] In this paper, I have argued that such a perspective risks complacency and fails to account for the need to adapt deterrence frameworks to address emerging challenges, including the two nuclear-peer threat and advancements in space, cyber, and disruptive technologies.

Furthermore, this assumption fails to recognize that our allies are not monolithic. As detailed in this paper, each region has its own distinct history, culture, and strategic environment, which complicates the dynamics of deterrence. Extended nuclear deterrence is not simply a signed treaty — it is a dynamic process that requires years of consultation, evolution, and adaptation to sustain relationships and ensure their relevance. Effective alliance management is essential to prevent our alliances from atrophying.[541] Therefore, to maintain credible deterrence, the United States must innovate and recalibrate its extended deterrence commitments, ensuring these commitments are aligned with the demands of a rapidly changing global security landscape.

Looking ahead, the United States faces critical choices about the future of its extended nuclear deterrence strategy. The multipolar world demands a more

540 Rupal N. Mehta, "Extended Deterrence and Assurance in Multiple Domains," in Jon R. Lindsay and Erik Gartzke, eds., *Cross-Domain Deterrence: Strategy in an Era of Complexity* (Oxford, UK: Oxford University Press, 2019), p. 235.

541 Historical examples, such as the Southeast Asia Treaty Organization (1954-1977), the Central Treaty Organization (1955-1979), and the Warsaw Pact (1955-1991), illustrate the consequences of alliances that failed to evolve and adapt to changing geopolitical landscapes.

integrated and flexible approach, one that balances the need for credible deterrence with the realities of finite resources and shifting domestic priorities. This will require collective resolve and sustained U.S. leadership. Allies must be empowered to take on greater responsibilities for their own defense, but this must be done in a way that strengthens, rather than weakens, alliance cohesion. Additionally, the United States must prioritize the modernization of its nuclear forces to ensure that its deterrence posture remains credible in the face of evolving threats.

The alternative to sustained U.S. leadership is a world in which adversaries like Russia and China dictate the terms of global security, leaving the United States increasingly isolated. Without credible extended nuclear deterrence, allies may feel compelled to develop their own nuclear arsenals, leading to a dangerous proliferation of weapons and heightened risks of miscalculation and conflict. The legacy of U.S. extended nuclear deterrence serves as both a guide and a warning: it demonstrates the power of collective resolve and strategic foresight, but it also underscores the profound consequences of missteps and complacency. Nevertheless, despite its inherent complexities and imperfections, extended nuclear deterrence has been—and should remain—a cornerstone of U.S. nuclear policy and strategy.

As the United States confronts the challenges of the next decade, it should draw on the lessons of its extended nuclear deterrence history to craft a strategy that preserves international stability and reinforces its leadership on the world stage. This effort will require not only steadfast commitments to its allies but also recognition of their indispensable role in addressing both regional and global security challenges. By fostering deeper collaboration and mutual trust, the United States and its allies can ensure that extended nuclear deterrence remains a vital tool for safeguarding peace and stability in an increasingly dangerous world.

The lesson for the future is clear: extended nuclear deterrence must not only adapt to emerging threats and shifting power dynamics but also inspire a shared vision of security—one that embraces innovation, strengthens alliances, and reaffirms the principles that underpin a stable and just international order. In this increasingly dangerous world, adopting a new strategic approach to U.S. extended nuclear deterrence is not just necessary—it is imperative.

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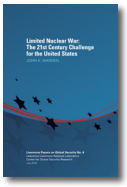

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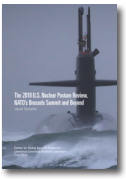

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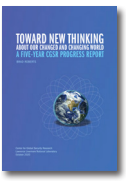

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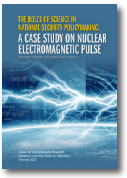

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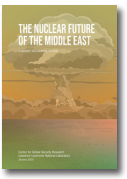

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