“A DARK SUN NEVER UNLEASHED”

BY

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The undersigned certify that this thesis meets masters-level standards of research, argumentation, and expression.

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DISCLAIMER

The conclusions and opinions expressed in this document are those of the author. They do not reflect the official position of the U.S. Government, Department of Defense, the United States Air Force, or Air University.

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ABSTRACT

The nuclear enterprise had been in the limelight, and its reinvigoration has been the number one priority for the Department of Defense and Air Force for the last decade. There has been a disconnect between senior leaders and the nuclear enterprise as a whole over the past 25 years. America's place in the world and global leadership in a new American Century is being torn between policy on nuclear weapons and broader strategic and foreign policy. The enduring vision that America can deepen and strengthen its uncontested global leadership and the growing realization that the balance of global power is shifting towards other countries pulls America's nuclear policy in two different directions. These are: advocating elimination of nuclear weapons in a world under non-threatening American primacy on the one hand, and on the other relying more heavily on its nuclear arsenal to sustain primacy as its edge in other elements of national power erodes. Senior civilian and Air Force leaders must navigate the disconnects and contradictions of policies and strategies and manage the media to build a nuclear enterprise tailored to current and future needs. In the end; nuclear weapons remain what they have always been – instruments of international policy.

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> *In a strange turn of history, the threat of global nuclear war has gone down, but the risk of a nuclear attack has gone up…as the only nuclear power to have used a nuclear weapon, the United States has a moral responsibility to act… So today I state clearly and with conviction America's commitment to seek the peace and security of a world without nuclear weapons. Countries with nuclear weapons will move towards disarmament, countries without nuclear weapons will not acquire them…*
>
> – President Barack Obama, Prague Speech

Carl von Clausewitz, the famous military strategist, has been quoted many times most famously as "War is the continuation of politics by other means."[1] If that's the case, then war with nuclear weapons—as seen in Japan in 1945—is a continuation of politics by extreme other means.

Nuclear deterrence has prevented war on a global scale for more than six decades, but the destructive power of the weapons makes many people uneasy. Since the first use of nuclear weapons more than 70 years ago, the United States (U.S.) has had many different policies regarding the weapons, both declared and undeclared. Politicians have embraced nuclear weapons for specific problems and shunned them for others. Public opinion about nuclear weapons has risen and fallen over the years, and the media has slipped in and out of love with the nuclear weapon many times. The ebb and flow of nuclear weapons policy will continue long into the future.

The U.S. nuclear monopoly ended shortly after World War II (WWII) when the Soviet Union (USSR) detonated its first atomic bomb in August 1949. From that point on, a competition—one aspect of the larger Cold War—developed between the U.S. and the USSR to build bigger and

[1] Carl von Clausewitz, *On War*, ed. and trans. Michael Howard and Peter Paret (Princeton, NJ: Princeton University Press, 1976), 87.

better weapons. The Cold War lasted more than 40 years until the fall of the Soviet Union in 1991.

The end of the Cold War increased non-nuclear states' incentives to acquire nuclear weapons. As American journalist David Ignatius writes, "The moment of maximum danger, [Military Strategist] Herman Kahn warned, would be in moving from a bipolar to a multipolar world."[2] According to historian and author Benjamin Frankel, "Bipolarity inhibits the spread of nuclear weapons while multipolarity induces their proliferation." In other words, if the goal is to reduce the spread of nuclear weapons, a bipolar world is more apt to prevent proliferation vice a multipolar world. Frankel predicted that in the post–Cold War era, "nuclear arms proliferation will likely intensify," and "the owners of these weapons will likely brandish them more openly to advance their political objectives." He warned that the weapons' "inherent complexity… dooms multipolar systems to instability, making them susceptible to crisis and war." Thus, the "end of bipolarity means that superpower guarantees—the most effective instrument to moderate the effects of systemic characteristics—will be reduced and weakened."[3]

Typically, the global balance of power has shifted, U.S. nuclear weapons development and policy has shifted along with it. This concept can be mapped from initial development and first use by the U.S. in a unipolar world, to advancements made to weapon design and threats of use in a U.S. / USSR bipolar world. The bipolar world that the nuclear weapon grew up in has changed dramatically, following the breakup of the USSR to what can be considered a multipolar world—a world where

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[2] David Ignatius, "New World Disorder," Washington Post, 4 May 2007, http://www.washingtonpost.com/wpdyn/content/article/2007/05/03/AR2007050301550.html.

[3] Benjamin Frankel, "The Brooding Shadow: Systemic Incentives and Nuclear Weapons Proliferation," in The Proliferation Puzzle: Why Nuclear Weapons Spread, ed. Zachary S. Davis and Benjamin Frankel, (London: Frank Cass, 1993), 36.

regional non-nuclear powers such as North Korea and Iran now have a play in nuclear politics alongside the People's Republic of China (PRC), France, India, Israel, Pakistan, U.S., USSR, and United Kingdon (UK). Despite the significant change from a bipolar to a multipolar world with regional actors heavily influencing politics, the United States still has a Cold War mentality in response to nuclear weapons and how they are used and viewed. Vipin Narang, a political scientist and author of *Nuclear Strategy in the Modern Era,* talks of how nuclear strategy needs to be overhauled and how it suffers from a "Cold War hangover" and "existential bias."[4]

While most of America's strategy, policy, and doctrines derive from this bipolar Cold War mentality, regional powers and international conflict are currently ruling the day. The Islamic Republic of Iran (Iran) and the Democratic People's Republic of Korea (DPRK) are currently controlling news headlines, and political rhetoric is being used to calm the masses about nuclear weapons and their potential employment options. International conflict has always been part of history, but the introduction of nuclear weapons has changed the dialogue.

While international conflict continues to include more and more regional players and non-state actors, Russia is experiencing a resurgence, along with a power shift in China. The resurgence and shift in the balance of power moving from a unipolar world to a fledgling multipolar world has a tremendous impact on America's nuclear weapons strategy and policy. Combining a multipolar world with regional players and international conflicts, a boiling point is set, and a culmination could soon arrive. Nuclear war, however, has *not* come to fruition, despite constant news articles about nuclear armageddon. In the words of the author David Von Drehle, "During the Cold War, the

[4] Vipin Narang, *Nuclear Strategy in the Modern Era: Regional Powers and International Conflict*, (Princeton, NJ: Princeton University Press, 2014), 226-31.

world's security was built on a handful of interlocking truths that were dreadful to contemplate, but blessedly stable… every brick of that deterrent edifice is now crumbling."[5] A tumultuous relationship between the media and nuclear technology advancement has been raging since 1945, following the dropping of the first atomic bomb.

The significant impacts of media on U.S. culture have to be grounded by context. Context does matter and has mattered throughout nuclear weapons history as evidenced by policy and strategy—changing into what it is today and possibly what it will become in the future. Significant events and the context behind them associated with nuclear weapons has created policy and strategy, which has come to pass, pushed boundaries, and charted new paths as time marched on. The words used by senior leaders, both military and civilian, have had, and will continue to have, lasting effects. Speeches, policies, and strategies all have meaning associated with them. The context of "what" and "why" is part of the larger picture and how nuclear policy and strategy come together.

This paper will look at the history of U.S. nuclear policy and how policymakers, strategists, and public opinion have shaped the nature and proposed use of nuclear weapons. Have previous administrations and times brought forth different solutions than those contained in the current nuclear posture review? Were these other solutions viable? If so, how might future administrations best pursue nuclear policy? There are important lessons to be learned from history. Current proliferation challenges have deep roots in the past, and for U.S. policies to be successful, an understanding of this history is vital. This understanding may help guide the next generation of nuclear policymakers

[5] David Von Drehle, "The Yikes Years: Life as the World's Lone Superpower Is Beginning to Make the Cold War Look Easy," *Washington Post Magazine*, 21 November 2004.

Chapter 1

President Harry S. Truman:

April 12, 1945 – January 20, 1953

The Early Cold War: 1945–1952

The atom bomb was no 'great decision.' It was merely another powerful weapon in the arsenal of righteousness.

– President Harry S. Truman

The United States of America emerged from World War II as the foremost military, political, and economic power in the world. During the war, American industry had increased to support wartime production, which brought the U.S. out of the Great Depression. After the war, the U.S. enjoyed a robust economy and a position of global power. For the first time, the U.S. began to provide economic assistance to other countries—even former enemies—around the world with the goal of rebuilding their shattered economies and preventing another global war.[1]

In 1919, the U.S. Senate refused to ratify the Treaty of Versailles, which would have committed the U.S. to the League of Nations. Many U.S. politicians feared entangling the U.S. both politically and militarily in overseas affairs. In 1945, however, the U.S. did commit to becoming a member of the United Nations (UN), an international organization designed to promote global security, commerce, and law. U.S. membership in the organization was a major shift in U.S. foreign policy. The U.S. opposed imperialism, but when the wars of decolonization became part of the Cold War, the U.S. was put in the position of supporting colonial powers such as France in Indochina. At the same time, the communist Soviet Union (USSR) reneged on some World War II wartime promises and demonstrated a powerful interest in dominating Eastern Europe. The U.S. took the lead in building a Western alliance

[1] "1945-1952: The Early Cold War," Department of State, United States of America: Office of the Historian, accessed 17 April 2018, https://history.state.gov/milestones/1945-1952/foreword

with European nations to counterbalance the USSR and contain the spread of communism. While this was happening, the U.S. restructured its military and intelligence forces, both of which would have a significant influence on U.S. Cold War policy.[2]

Atomic diplomacy

During WWII, the U.S., Canada, Great Britain, USSR, Germany, and Japan were involved in scientific research to develop an atomic bomb. In mid-1945 the U.S. was successful in developing and testing the world's first atomic bomb and then proved its utility when two atomic weapons were dropped on Hiroshima and Nagasaki to bring a rapid and decisive end to the war with Japan. There was not a lengthy debate about whether to drop the atomic weapon on Japan; most decision makers argued that it was a means to a quicker end to the Pacific conflict that would ensure fewer conventional war casualties.[3] During this timeframe, the U.S. also considered the role that the bomb's impressive power could play in postwar relations with the USSR. President Truman and many of his advisers anticipated that the U.S. atomic monopoly might offer diplomatic leverage with the Soviets.

During the early Cold War years, the U.S. had nuclear primacy because of having the technology and the only nuclear weapons in the

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[2] "1945-1952: The Early Cold War," Department of State, United States of America: Office of the Historian, accessed 17 April 2018, https://history.state.gov/milestones/1945-1952/foreword

[3] While Truman repeatedly claimed he alone made the decision to drop the atomic bombs, no official record of an order (either written or verbal) to drop the bombs exists. However, on display in the Truman Library Museum is a copy of the press release dictated by Truman at Potsdam with a hand-written message to "Sec War" stating, "Reply to your 41011, suggestions approved. Release when ready but not sooner than August 2. HST" While it appears to reference release of the press statement, some historians claim it as the only record in existence of Truman authorizing use of the atomic bomb. For a deeper discussion of Truman's involvement in the decision, see Wesley F. Craven and James L. Cate, *The Army Air Forces in World War II*, vol 5, *The Pacific: Matterhorn to Nagasaki June 1944 to August 1945.*

world. With nuclear primacy, atomic diplomacy was an attempt to use the threat of nuclear warfare to achieve diplomatic goals. Once the atomic bomb had been successfully tested and used against Japan, U.S. officials considered the potential non-military benefits that could be derived from the American nuclear monopoly. The U.S., on several occasions during these early years of the Cold War, conducted what might be termed "atomic diplomacy."

Presidential politics with atomic diplomacy

In the early 1940s, President Franklin D. Roosevelt was presiding over the Manhattan Project—America's top-secret venture to develop an atomic bomb.[4] After the death of President Roosevelt in April 1945, President Harry Truman had to decide whether to continue the policy of guarding nuclear information.[5] Eventually, in July 1945, President Truman mentioned the existence of a particularly destructive weapon to Soviet Premier Joseph Stalin at the Allied meeting at Potsdam, but Truman did not provide specifics about the weapon or its uses. Premier Stalin, in any case, knew all about the weapon and its capabilities, thanks to Soviet espionage.

In mid-1945, it was clear the USSR would enter into the war in the Pacific and thereby be in a position to impact the postwar balance of power in the region. U.S. officials recognized there was little chance of preventing this, although they preferred a U.S.-led occupation of Japan rather than a co-occupation as had been arranged for Germany. Some U.S. policymakers hoped that the U.S. monopoly on nuclear technology and the demonstration of its destructive power in Japan might influence

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[4] Dennis M. Drew and Donald M. Snow, *Making Twenty-First-Century Strategy: An Introduction to Modern National Security Processes and Problems* (Maxwell AFB, AL: Air University Press, 2006), 165.

[5] "Atomic Diplomacy," Department of State, United States of America: Office of the Historian, accessed 17 April 2018, https://history.state.gov/milestones/1945-1952/atomic.

the Soviets to make concessions in Asia or Europe. President Truman did not threaten Premier Stalin with the bomb, as the USSR was still considered a valuable wartime ally, but believed instead that its existence alone would limit USSR options and be considered a check on Soviet aggression.

NSC-68

The United States National Security Council (NSC) presented President Truman the National Security Council Report 68 (NSC-68) in April 1950. A public document, NSC-68 is considered one of the most influential documents of American policy because it helped launch the Cold War military. International relations expert Ernest R. May stated NSC-68 "provided the blueprint for the militarization of the Cold War from 1950 to the collapse of the Soviet Union at the beginning of the 1990s."

NSC-68 and its subsequent versions advocated a large expansion in America's military budget, the development of a hydrogen bomb (super bomb or fusion bomb), and increased military aid to allies of the U.S. It made containment of global Communist expansion a high priority. NSC-68 rejected the alternative policies of friendly détente and went for containment of the Soviet Union.[6] NSC-68 saw the objectives and aims of the U.S. as sound, yet poorly implemented, calling "present programs and plans…dangerously inadequate."[7] NSC-68 called for substantial peacetime military expenditure, in which the U.S. possessed "superior overall power," "in dependable combination with other like-minded nations." It called for a U.S. military capable of:

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[6] Walter L. Hixson, "What Was the Cold War and How Did We Win It?" Reviews in American History 22, no. 3 (1994): 507-11, doi:10.2307/2703029.
[7] The Executive Secretary, A Report to the National Security Council NSC 68", (Washington, DC: National Security Council, 1950). Document is now declassified.

- Defending the Western hemisphere and essential allied areas so that their war-making capabilities could be developed

- Providing and protecting a mobilization base while the offensive forces required for victory were being built up

- Conducting offensive operations to destroy vital elements of the Soviet war-making capacity and to keep the enemy off balance until the full offensive strength of the United States and its allies can be brought to bear

- Defending and maintaining the lines of communication and base areas necessary to the execution of the above tasks

- Providing such aid to allies is as essential to the execution of their role in the above tasks.[8]

Ramifications

Immediately after WWII, the U.S. confidence in its nuclear monopoly had consequences for its diplomatic agenda. The atomic bomb was useful in guaranteeing that Western Europe relied on the U.S. for security rather than seek security with the USSR. Even if the U.S. did not station large numbers of troops in Europe, it could protect the region by placing it under the American "nuclear umbrella" of areas that the U.S. professed to be willing to use the bomb to defend.[9]

In the Pacific, however, the U.S. insistence on hegemony in the occupation and reintegration of Japan stemmed in part from the confidence of being the sole nuclear power and in part from what that nuclear power had gained: Japan's total surrender to U.S. forces.

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[8] The Executive Secretary, A Report to the National Security Council NSC 68", (Washington, DC: National Security Council, 1950). Document is now declassified.

[9] Department of State, United States of America: Office of the Historian, "The Early Cold War: Milestones 1945-1952," University of Maryland University College, accessed 17 April 2018, https://umuc.equella.ecollege.com/file/bea72868-344c-4fd9-be02-3d2a1fcc9fba/1/Th.

Though having atomic weapons inspired greater assurance in the immediate postwar years, U.S. nuclear control was not long in duration. U.S. nuclear control came to an end when the USSR successfully exploded its first atomic bomb in 1949, followed by the UK in 1952, France in 1960, and the PRC in 1964.[10]

NSC-68 outlined many possible actions the U.S. government and senior leaders could take if warranted to protect U.S. interests. These included isolationism of the U.S., war with the USSR, negotiations with the USSR, or "the rapid building up of the political, economic, and military strength of the free world."[11] Many people looked toward a renewal of U.S. isolation, but the authors of NSC-68 and President Truman rejected isolationism and moved toward the build-up of the U.S.'s political, economic, and military strength to deter the USSR's aggression in Eurasia.

NSC-68 determined that the only plausible way to deter the USSR was for President Truman to support a massive build-up of both conventional and nuclear arms. More specifically, such a program should seek to protect the U.S. and its allies from Soviet land and air attacks, maintain lines of communication, and enhance the technical superiority of the U.S. through "accelerated exploitation of [its] scientific potential." To fund the increase in military spending that this conclusion demanded, the report suggested that the U.S. government increase taxes and reduce other expenditures.[12]

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[10] Department of State, United States of America: Office of the Historian, "The Early Cold War: Milestones 1945-1952," University of Maryland University College, accessed 17 April 2018, https://umuc.equella. ecollege.com/ file/ bea72868-344c-4fd9-be02-3d2a1fcc9fba/1/Th.

[11] "NSC-68, 1950," Department of State, United States of America: Office of the Historian, accessed 17 April 2018, https://history.state.gov/ milestones /1945-1952/NSC68.

[12] "NSC-68, 1950," Department of State, United States of America: Office of the Historian, accessed 17 April 2018, https://history.state.gov/ milestones/1945-1952/NSC68.

Influence of the media

Nuclear weapons and their potential effects have been a recurring motif in popular culture since their public debut in August 1945. In fact, the Cold War is often referred to as the "atomic age,"[13] which was a phrase invented by William L. Laurence, a *New York Times* journalist who became the official journalist for the Manhattan Project.[14] He witnessed both the Trinity test and the bombing of Nagasaki and went on to write a series of articles extolling the virtues of the new weapon. His reporting before and after the bombings helped spur public awareness of the potential of nuclear technology and, in part, motivated the development of the technology in the U.S. and the Soviet Union.[15]

Of course, nuclear technology incorporates much more than atomic weapons, and the media helped the public understand that. Nuclear technology gained popularity because of the boundless amounts of energy from nuclear power generators. Just as nuclear bombs destroyed conventional weapons, nuclear energy was going to destroy coal and oil for power generation. Nuclear powered cars such as the Ford Nucleon concept, built in 1958, and planes that had nuclear-powered jet engines were to fill U.S. roads and airways, and nuclear medicine was on the path to curing cancer.[16]

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[13] Professor Ferenc M. Szasz and Issei Takechi, "Atomic Heroes and Atomic Monsters: American and Japanese Cartoonists Confront the Onset of the Nuclear Age, 1945–80", The Historian 69.4 (Winter 2007): 728-752.
[14] William L. Laurence, "Drama of the Atomic Bomb Found Climax in July 16 Test," The New York Times, 26 September 1945, retrieved 17 April 2018.
[15] David Holloway, Stalin and the Bomb: The Soviet Union and Atomic Energy, 1939–1956, (New Haven, CT: Yale University Press, 1994), 59–60.
[16] In May 1946, the United States Army Air Forces started the Nuclear Energy for the Propulsion of Aircraft (NEPA) project, which conducted studies until the Aircraft Nuclear Propulsion (ANP) program replaced NEPA in 1951. The ANP program included provisions for studying two different types of nuclear-powered jet engines: General Electric's Direct Air Cycle and Pratt & Whitney's Indirect Air Cycle. ANP planned for Convair to modify two B-36s under the MX-1589 project. One of the B-36s, the NB-36H, was to be used for studying shielding requirements for an airborne reactor, while the other was to be the X-6; however, the program was cancelled before the X-6 was completed. The first

Although media influencers and personalities touted the benefits of nuclear technology, they had to contend with one negative aspect of its reputation. The focus at the beginning of the atomic age was very much on the shock and awe of the fireball and aftermath of the mushroom cloud, which in the end became the true symbol of the atomic age.[17] Initially, the atomic age was depicted in the media by images of bombed-out cities and mushroom clouds in the distance—no human bodies or up-close destruction. The true horrors of the first atomic bombs were not released until years later by the government, but an article by John Hersey in August of 1946 titled "Hiroshima" was published in *The New Yorker*. The article turned into a book that sold more than three million copies to date and tells the stories of six survivors of the atomic bomb dropped on Hiroshima, covering a period of time immediately before and one year after the atomic bomb was dropped on August 6, 1945.[18]

Summary

Combining atomic diplomacy and the influence of the media had, along with NSC-68, give a critical understanding of the beginning of the Cold War and nuclear strategy. The implementation of NSC-68 created a shift in U.S. policy: communism containment. The focus of this change was not on the USSR but all communist governments. President Truman defined the U.S. policy of containment that did not previously exist. This

operation of a nuclear aircraft engine occurred on January 31, 1956 using a modified General Electric J47 turbojet engine. The Aircraft Nuclear Propulsion program was terminated after the President's annual budget message to Congress in 1961.

[17] Paul S. Boyer, *By the Bomb's Early Light: American Thought and Culture at the Dawn of the Atomic Age* (New York: Pantheon, 1985), 5, 8-9, 207.

[18] Although the story was originally scheduled to be published over four issues, the entire edition of August 31, 1946, was dedicated to the article. The article and subsequent book are regarded as one of the earliest examples of the New Journalism, in which the story-telling techniques of fiction are adapted to non-fiction reporting.

along with the build-up of both nuclear and conventional arms has been debated as the beginning of the escalation of the Cold War.

The outcome of NSC-68 was more than tripling U.S. military expenditures, including approval of tactical and strategic nuclear weapons, a chain of overseas bases, rejection of negotiations with communists, and global intervention under the sacrosanct banner of "national security."[19] It also allowed the U.S. to have an unquestioned superiority in capabilities which extended the time until parity happened. The U.S. had no choice but to depend on its nuclear arsenal until substantial conventional forces were built. NSC-68 disallowed the thought for a policy of no first use of nuclear weapons and stated, "In our present situation of relative unpreparedness in conventional weapons, such a declaration would be interpreted by the USSR as an admission of great weakness and by our allies as a clear indication that we intended to abandon them."

[19] Walter L. Hixson, "What Was the Cold War and How Did We Win It?" Reviews in American History 22, no. 3 (1994): 507–11, https://www.jstor.org/stable/2703029.

Chapter 2

President Dwight D. Eisenhower:

January 20, 1953 – January 20, 1961

The Cold War: 1953–1961

Yes, of course they would be used. In any combat where these things can be used on strictly military targets and for strictly military purposes, I see no reason why they shouldn't be used just exactly as you would use a bullet or anything else… We are in the era of the thermonuclear bomb that can obliterate cities and can be delivered across continents. With such weapons, war has become, not just tragic, but preposterous.

– President Dwight D. Eisenhower

President Dwight D. Eisenhower assumed the presidency just after the detonation of the world's first thermonuclear device (Ivy Mike) in November of 1952 on the island of Elugelab in Enewetak Atoll, in the Pacific Ocean. President Eisenhower campaigned on the policy to re-examine the balance between security for the U.S. and solvency to afford long-term liabilities. But the first matter of business to be solved was the Korean Conflict. While creating a fabric of security for the U.S., President Eisenhower shifted policy because the leader of the USSR, Joseph Stalin, had died in office in 1953. The USSR and the North Koreans discussed and decided to take steps toward ending the war. Both sides agreed to a cease-fire in July 1953. President Eisenhower and Secretary of State John Foster Dulles vowed that there would be no more conflicts like the one in Korea.

A Basic National Security Policy

Needing a coherent strategy and policies toward the USSR, President Eisenhower and Secretary Dulles asked for Project Solarium to be completed. Project Solarium was a task-force project for which three options were considered. Task Force A was to consider a containment policy, seeking to prevent Soviet expansion in Europe while minimizing

the risk of general war.[1] Task Force B was to consider a line in the sand of containment, and if this line were passed, it would lead to general war and threaten massive U.S. and allied retaliation using any means necessary. Task Force C was to consider the rollback of the USSR by forcing it to capitulate by coercion. At the end of the project, President Eisenhower built a policy around Task Force A: a containment policy.

Massive Retaliation

A move from the Truman Administration and the more conventional approach, Secretary of State Dulles outlined the change in direction as "massive retaliation," which was assumed to be a response to any communist-inspired aggression. Massive retaliation was meant to create a massive nuclear strike against the USSR and China, no matter how marginal the confrontation was. This policy put a much larger emphasis on nuclear weapons in U.S. strategy and was more of a complex deterrence strategy than a full nuclear war against the USSR. Also, "massive retaliation" and containment put the "first move" on the USSR, meaning the USSR would be the one to trigger a hot war—not the United States.

Massive retaliation was available to the Eisenhower administration because, by 1953, many of the projects put forth by the Truman administration had come to fruition. The U.S. had a range of nuclear options, from the hydrogen bomb, which could take out a city of any size, to small tactical weapons that could be used on the battlefield. In December 1953, the Joint Chiefs of Staff said that "today atomic weapons have virtually achieved a conventional status within our armed

[1] Tyler Nottberg, "Eisenhower Institute at Gettysburg College - Solarium for Today", Eisenhower Institute at Gettysburg College, accessed 17 April 2018, http://www.eisenhowerinstitute.org/about/living_history/solarium_for_today.dot, Retrieved 23 January 2018.

forces."[2] Even President Eisenhower believed that if nuclear weapons were used on a strictly military target and for military purpose, then there would be no reason not to use nuclear weapons—due to the fact that large quantities of both tactical and strategic weapons could easily be produced. Additionally, massive retaliation was brought forth by the Eisenhower administration in an effort to stabilize the economy as the rearmament of the conventional force was proving to be inordinately expensive.

NSC 162/2

Project Solarium formed the basis for NSC 162/2, which in many ways solidified the policy of containment against the USSR. NSC 162/2 stated that the U.S. needed to maintain "a strong military posture, with emphasis on the capability of inflicting massive retaliatory damage by striking offensive power," and that the U.S. "will consider nuclear weapons as available for use as other munitions."[3] This policy meant that if communists attacked any country in the free world, the U.S. would use all available means—including nuclear weapons—against the USSR or China. Two additional purposes of NSC 162/2 were to deter the USSR and to reassure the NATO allies. However, during this time NCS 162/2 created confusion and introduced ambiguity when considering the use of nuclear weapons for NATO.

In the end, NSC 162/2 formalized the concept of nuclear deterrence and extended that deterrent to Western Europe. This new national security policy would depend primarily upon the ability to retaliate instantly by means and at places of the U.S.' choosing through massive retaliation.

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[2] Lawrence Freedman, *The Evolution of Nuclear Strategy* (New York, NY: Palgrave Macmillan, 2003), 73.
[3] National Security Council (NSC) 162/2, Basic National Security Policy, 30 October 1953

New Look

A culmination of security policies, massive retaliation, and NSC 162/2 gave President Eisenhower his New Look Policy. This new policy echoed Eisenhower's desire to balance America's Cold War military commitments and the nation's financial resources. The policy stressed reliance on strategic nuclear weapons to deter potential threats—both nuclear and conventional—from the Eastern Bloc of nations headed by the USSR.

NSC 5440

NSC 5440 provided a new approach to Eisenhower's New Look Policy. NSC 5540 allowed the president to apply force selectively and flexibly, which became increasingly important in maintaining the morale and will of the free world to resist aggression. As the fear of nuclear war grew, the U.S. and its allies never allowed themselves to get into the position where they had to choose between not responding to local aggression or applying force in ways which their citizens or allies would consider undue risk of nuclear devastation. However, the U.S. could not afford to preclude itself from using nuclear weapons even in a local situation. The last part of NSC 5440 discusses the choice the U.S. must make if confronted by allied acquiescing of Communist aggression. NSC 5440 took measures risking either general war or loss of allied support, which the U.S. must be prepared to take these risks if necessary for its security.[4]

Campbell Craig, an American historian, talks about NSC 5440 and states, "NSC 5440 was a fundamental revision of the earlier Basic National Security Policy. Its authors (a) renounced massive retaliation, (b) precisely articulated the strategy of 'flexible response' as it would become known seven years later, and (c) predicted, in the last sentence,

[4] Campbell Craig, *Destroying the Village: Eisenhower and Thermonuclear War* (New York, NY: Columbia University Press, 1998), chapter 3.

exactly the dilemma which the Eisenhower administration would face in Berlin four years hence."[5]

MC 14/2

MC 14/2 for the North Atlantic Treaty Organization (NATO) was a basic massive retaliation or tripwire strategy, which stated that should a Soviet invasion occur in NATO territory, massive nuclear forces would be used in an all-out nuclear war. This brought forth a deterrent nuclear posture that would set in motion a 20-year buildup of nuclear weapons deployed in Western Europe. Also, President Eisenhower indicated his firm intention to launch a strategic Air Force immediately in case of alert of an actual attack. He stressed that a major war would be an atomic war.

Single Integrated Operational Plan 62

Another movement with the second or retaliatory strike force was the formation of the Joint Strategic Target Planning staff. This staff was created to build a Single Integrated Operation Plan (SIOP), which encompassed all three parts of the triad—bombers, ICBMs, and submarines—into a single plan. The SIOP identified targets, allocated weapons to the targets, and indicated how those weapons were delivered to those targets. The SIOP was based upon the written guidance that began with the president and was refined by the Secretary of Defense and then further elaborated upon by the Joint Staff. This was an extraordinarily elaborate undertaking for SIOP 62, which attempted to finish the entire plan in a very compressed timeframe. SIOP 62 appeared to have some options, but in reality, SIOP 62 was inflexible and was a single attack option that was dependent on different alert postures.

[5] Campbell Craig, *Destroying the Village*, chapter 3.

Killian Report

While massive retaliation took hold, many different problems arose during the Eisenhower administration. Fear of a missile gap became the number-one priority for Congress, expressed in the Killian Report, which emphasized the need for an Intercontinental Ballistic Missile (ICBM). Specifically, the report assigned Project Atlas the highest national priority and approved the rapid development and deployment of an operational ICBM force.

The Killian Report was also very important, particularly for the matter of ensuring the survivability and the effectiveness of the nuclear deterrent. It identified the need for the U.S. to develop missiles as rapidly as possible and noted that the ICBM would be much less vulnerable than a bomber airfield. The hypothetical Soviet strike at U.S. bases led to an acceleration of the development of our missile programs, both the ICBM and the Submarine Launched Ballistic Missile (SLBM) programs. The development of SLBMs put weapons in the undetectable black oceans where they could not be found or attacked. With both the Polaris SLBM and submarines, the president could make decisions without having to worry about losing everything, and a second strike or retaliatory strike became possible.

Media and Public

Throughout the Eisenhower administration, a growing concern emerged among both members of the media and the public. The advent of the thermonuclear weapon introduced a new level of devastation. From the mid-1950s through the early 1960s, public apprehension and awareness increased from media outlets and the military-industrial complex. The Castle Bravo test (March 1954) in the Marshall Islands in the South Pacific was accompanied by one of the worst American nuclear accident in history, and created angst among the population due to the radioactive fallout. The U.S. and Japanese media showed the effects of

radiation on local islanders and fishermen in the area of the detonation and how radioactive fallout was hurting and killing people. The movie *Godzilla* cast a negative light on nuclear weapons and the fallout from the thermonuclear weapons being tested in the South Pacific. *Godzilla* director Ishirō Honda stated, "For the start, this film frankly depicts the horrors of the Atomic Bomb."[6] *Godzilla* was only the tip of the iceberg. In the U.S. and worldwide, there was a rash of monster movies in which the creatures were the products of nuclear tests gone awry. A short list includes: *Them!* (giant ants), *The Beginning of the End* (giant grasshoppers), *Tarantula*, *Gorgo*, and *Fiend Without a Face*.

The public did not know much about how thermonuclear weapons worked, so the fear instilled by guessing about an unknown drove many to push for building larger amounts of weapons with larger yields. The government, along with the media, campaigned to build public knowledge and allay their fear with the *Duck and Cover* film. *Duck and Cover* was a civil defense training film that was widely distributed to U.S. schoolchildren in the 1950s. It advised students on what to do in the event of a nuclear explosion.[7]

Summary

Throughout the Eisenhower administration, a growing nuclear enterprise was emerging. With the United States' development of the thermonuclear weapon followed by the subsequent test of a Soviet thermonuclear weapon, a shift to massive retaliation took place. President Eisenhower helped spur European economic growth, thus committing fewer young men to the military and building wealth in

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[6] Hajime Ishida, *Memories of Ishiro Honda, Twenty Years After the Passing of Godzilla's Famed Director* (Japan: Movieland Classic LLC, 2013), 19-20.

[7] Daniel Eagan, *America's Film Legacy: The Authoritative Guide to the Landmark Movies in the National Film Registry* (New York, NY: The Continuum International Publishing Group Inc., 2010) 452.

Europe outside of the military—all because President Eisenhower took the chance in the 1950s of betting on massive retaliation.

The building of a second or retaliatory strike force was essential to the shift in nuclear policy. This prompted major changes in the nuclear force's command, control, and communications, with the building of a low and very low-frequency system to make sure that messages were able to transmit. Continuity of Operations Planning and Continuity of Government were built to ensure survivability of our way of life. However, a civil defense program built on components of massive retaliation signaled that if the USSR attacked the U.S., the U.S. would be prepared and was taking steps to protect and defend the U.S. population. Thus, creating the emphasis on individual preparations and creating more reasons for the USSR to attack now rather than later.

Chapter 3

President John F. Kennedy:

January 20, 1961 – November 22, 1963

President Lyndon B. Johnson:

November 22, 1963 – January 20, 1969

The Cold War: 1961–1969

Eighteen years ago the advent of nuclear weapons changed the course of the world as well as the war. Since that time, all mankind has been struggling to escape from the darkening prospect of mass destruction on earth. In an age when both sides have come to possess enough nuclear power to destroy the human race several times over, the world of communism and the world of free choice have been caught up in a vicious circle of conflicting ideology and interest. Each increase of tension has produced an increase of arms; each increase of arms has produced an increase of tension.

– President John F. Kennedy

Power. The only power I've got is nuclear and I can't even use that!

– President Lyndon B. Johnson

President John Kennedy took over from President Dwight Eisenhower after campaigning on a claimed increase in the missile gap between the U.S. and USSR. President Kennedy's administration was very skeptical of the New Look, President Eisenhower's national security policy, and the policy of massive retaliation. The New Look policy was becoming quickly obsolete with the introduction of force-wide inter-continental delivery systems (bombers, ICBMs, SLBMs) that undermined the credibility of a deterrent threat. The U.S. and its European allies had their defense strategy threatened because the U.S. could no longer rely on having the nuclear advantage to offer security for itself and its partners.

Both President Kennedy's and President Johnson's administrations were greatly influenced by Secretary of Defense Robert S. McNamara. Between 1961 and 1968, Secretary McNamara focused on innovation in

strategic concepts that shifted emphasis back to the Pentagon (though to the civilian bureaucracy rather than the military services) and away from universities and institutes.[1] Along with the change in the focal point, Secretary McNamara brought a model of management through quantitative measurements.

Flexible Response

The Kennedy administration looked at SIOP 62 and saw no flexibility other than suicide or surrender. Also, there was no differentiation between China and Russia, despite the ongoing Sino-Soviet split that was occurring in the late 1950s and 1960s. "Flexible response" was a call for mutual deterrence at the strategic, tactical, and conventional levels, giving the U.S. the ability to respond to hostility across the spectrum of war, not limited to a nuclear response. Technology had advanced since massive retaliation was adopted, along with improvements in communication and transportation. This meant U.S. forces could be deployed more efficiently, quickly, and have more flexibility than before. Key advisers persuaded President Kennedy that having a plethora of options would allow him to apply the suitable amount of force on the correct targets without risking escalation or sacrificing alternatives. This response would improve the credibility of the U.S.' deterrent force, as the U.S. would now have low-intensity choices and consequently would be more likely to use them, rather than massive retaliation's all-or-nothing options.[2]

The idea of "flexible response" was built and implemented to offer several possibilities across the range of warfare, in addition to nuclear options such as massive retaliation, which allowed for the U.S. to deal with enemy hostility swiftly. Additionally, the survivability of the

[1] Freedman, *The Evolution of Nuclear Strategy*, 216.
[2] Walter S. Poole, *Adapting to Flexible Response, 1960–1968* (Washington, DC: Office of the Secretary of Defense, 2013), 467.

retaliatory capability was stressed, which led to the diversification of the strategic force, development of the strategic triad, and half the Strategic Air Command (SAC) force being put on permanent alert status.

No Cities

Secretary McNamara wanted to limit damage to the U.S. by developing distinct offensive and defensive strategies in the event of nuclear war. Counterforce, an offensive strategy, sought to destroy Soviet military installations and infrastructure, thus incapacitating the USSR's military hardware before it could be used. In a 1962 speech to the University of Michigan-Ann Arbor, Secretary McNamara publicized that the U.S. would refrain from striking counter-value targets (cities) early in nuclear war, reserving attacks for later in war, should the Soviets not show similar restraint. This would not only encourage the Soviets to spare American cities but would secure the United States' bargaining power by holding hostage something that the Soviets might value.[3]

The "no cities" concept could be viewed as an offshoot of the theories of restricted strategic war or what is known as limited war. These theories are considered to show restraint; as belligerents do not expend all of the resources at their disposal, whether human, industrial, agricultural, military, natural, technological, or otherwise in a specific conflict.[4] Secretary McNamara started to approach nuclear exchanges in terms of negotiating and stated, "We may seek to terminate a war on favorable terms by using our forces as bargaining weapons and by threatening further attack."[5] The idea of attacking restricted military targets rather than restricted civilian targets as a bargaining tactic had a

[3] Freedman, *The Evolution of Nuclear Strategy*, 222.
[4] Robert Endicott Osgood, *Limited War: The Challenge to American Security* (Chicago, IL: University of Chicago Press, 1957), 1-2.
[5] William W. Kaufmann, *The McNamara Strategy* (New York, NY: Harper and Row, 1964), 75.

respectable pedigree.[6] Secretary McNamara realized that wars had to be terminated, which would rely on a political process that would include bargaining. Similarities between nuclear strategy within this timeframe and game theory are easily identified. Game theory is the study of mathematical models of conflict and cooperation between intelligent rational decision-makers. McNamara wanted to limit and control a nuclear exchange as much as possible, using similar methods.

Change from No Cities

The "no cities" concept was abandoned because of multiple issues with the way it was perceived in the U.S., by allies, and in the USSR. The USAF built two prototypes of the B-70 bomber because of the need for a more accurate system to hold Soviet counter-force weapons at risk. The allies saw the "no cities" policy as a "no first use" policy. However, NATO's nuclear strategy was not rigidly oriented towards the use of nuclear weapons solely for retaliation and counterforce.[7] NATO believed that deterrence rested on the thought of first use. The USSR saw "no cities" as a first strike rather than a second strike. The emergence of counterforce served only to put preventative actions at the forefront of USSR thinking. A Soviet strategist wrote, "A strategy which contemplates attaining victory through the destruction of the armed forces cannot stem from the idea of a 'retaliatory' blow; it stems from preventive action and the achievement of surprise."[8]

Assured Destruction

Though not an official term, MAD (mutually assured destruction) is a policy of military strategy and national security policy in which the full-

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[6] Herman Kahn, *On Thermonuclear War* (Princeton, NJ: Princeton University Press, 1960), 174-175.
[7] Freedman, *The Evolution of Nuclear Strategy*, 229.
[8] Marshal V. D. Sokolovsky, *Soviet Military Strategy* (New York, NY: Crane Russak, 1975), 88.

scale use of nuclear weapons by two or more opposing forces would cause the complete extermination of both the attacker and the defender.[9] MAD is built on deterrence theory, which holds that the threat of using robust weapons against the enemy prevents the enemy's use of those same weapons. MAD, a form of equilibrium strategy is built on the premise that once armed, neither side has any incentive to initiate a conflict or to disarm, thereby creating a balance of power, at least concerning nuclear warfare.

MAD, based on the 1950s arguments of "stable balance of power," and Robert Wohlstetter's "delicate balance of terror," made Secretary McNamara's approach controversial because he refused to be alarmed or hindered by the Soviet attainment of an assured destruction capability.[10] However, from the start of the Kennedy administration, there was a desire by the White House to reassure opposing forces that the U.S. did not intend to prepare for or execute a first strike. McNamara explained the virtues of a secure second-strike capability and how it removed incentives to pre-empt action, suggesting that it might be valuable for the sake of a stable balance of terror if both sides had second-strike capabilities.

MAD's formula was chosen to emphasize the disastrous nature of total war with nuclear weapons, resulting in total annihilation of cities with no other options. Secretary McNamara bounced back from his failure to promote a counterforce strategy with "no cities" and primarily focused the U.S.'s nuclear power on little else but cities under the concept of MAD.

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[9] Col. Alan J. Parrington, "Mutual Assured Destruction: Strategic Doctrine in Question," Air and Space Power Journal (Winter 1997): http://www.dtic.mil/dtic/tr/fulltext/u2/a529841.pdf

[10] Freedman, *The Evolution of Nuclear Strategy*, 234.

SIOP 63

In 1961–1962, the Kennedy administration revised SIOP 62, and the revision was supervised by Secretary McNamara. His goal was to change the doctrine from massive retaliation to "flexible response." SIOP-63 went into effect in July 1962 and continued mostly untouched for more than ten years. Instead of one spasm attack (uncontrollable, automatic nuclear war), the plan proposed five escalating attack options. These options focused on specific targets based on enemy warfighting capability and locations that the U.S. would attack first which included:[11]

1. Soviet nuclear missile sites, bomber airfields, and submarine tenders.
2. Other military sites away from cities, such as air defenses.
3. Military sites near cities.
4. Command-and-control centers.
5. Full-scale spasm attack.

SIOP 63 created many smaller target options for possible use. In addition to smaller target options, SIOP 63 contemplated the possibility that options one and two could be used in combination to prevent an "impending major Sino-Soviet Bloc attack upon the U.S. or its allies."[12] However, by 1963, Secretary McNamara determined that such plans were impractical because the situations for which nuclear weapons might be used were so unpredictable that advanced planning was impossible.

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[11] Desmond Ball, "U.S. Strategic Forces: How Would They Be Used?" *International Security* 7, no. 3 (1982): 31-60. doi:10.2307/2538550.
[12] Ball, "U.S. Strategic Forces: How Would They Be Used?", 31-60

Partial Test Ban Treaty

The Partial Test Ban Treaty (PTBT) is the abbreviated name of the 1963 Treaty Banning Nuclear Weapon Tests in the Atmosphere, in Outer Space and Under Water, which prohibited all test detonations of nuclear weapons except for those conducted underground. President Kennedy argued for a reduction in Cold War tensions, with a test ban serving as the first step towards complete global disarmament, stating:

> ...a fresh start is badly needed—is in a treaty to outlaw nuclear tests. The conclusion of such a treaty—so near and yet so far—would check the spiraling arms race in one of its most dangerous areas. It would place the nuclear powers in a position to deal more effectively with one of the greatest hazards which man faces in 1963, the further spread of nuclear arms. It would increase our security—it would decrease the prospects of war. Surely this goal is sufficiently important to require our steady pursuit, yielding neither to the temptation to give up the whole effort nor the temptation to give up our insistence on vital and responsible safeguards.[13]

The PTBT was the first of a series of nuclear arms control treaties in the second half of 20th century. The PTBT has been considered the stepping stone to the Treaty on the Non-Proliferation of Nuclear Weapons (NPT) of 1968, which made explicit reference to the progress provided by the PTBT.[14]

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[13] John F. Kennedy, president, USA (address, commencement speech at American University, Washington D.C. 10 June 1963.)

[14] "Comprehensive Test Ban Treaty Chronology". Federation of American Scientists. Retrieved 25 February 2018, https://fas.org/nuke/control/ctbt/chron1.htm

Media Influence

The media during the 1960s completely changed course regarding nuclear warfare and became extremely influential in the proximate years. Rising tensions followed by the resolution of the Cuban Missile Crisis demonstrated to the world that MAD had the potential to be a stabilizing effect. Although MAD worked, pop culture did not portray nuclear weapons and war positively. Two widely seen movies in the mid-1960s, *Fail Safe* and *Dr. Strangelove or: How I Learned to Stop Worrying and Love the Bomb* broadcast the ease of stumbling into thermonuclear war. The two films, one played straight, the other for laughs, highlighted the perceived insanity of deterrence theory in practice.

After the Cuban Missile Crisis in 1962, the media started to cast nuclear power as a new boogeyman. Nuclear power was shown to create different forms of radiation that could be the same as fallout. The media latched on to the secrecy surrounding the work being accomplished by the Atomic Energy Commission (AEC). This incited a fear of the unknown in the nuclear power world, which scared the public away in the late 1960s.

The media played a key role in the 1964 U.S. presidential campaign. A political advertisement was aired once, and only once, by the incumbent President Johnson's campaign in which the commercial begins with a little girl standing in a meadow with singing birds, picking the petals of a daisy while counting each one—repeating some numbers and counting some in the wrong order.[15] After she makes it to "nine," she pauses as if trying to think of the next number, and an adult male voice is then heard saying "ten," at the start of a missile launch countdown. Apparently, in response to the countdown, the girl turns her head toward a point off-screen, and then the scene freezes. As the countdown continues, a zoom of the video still focuses on the girl's right eye until

[15] "Flower Power," Newsweek March 26 – April 2, 2012, 17.

her pupil fills the screen, eventually blacking it out as the countdown simultaneously reaches zero. The blackness is instantly replaced by the bright flash and thunderous sound of a nuclear explosion, featuring video footage of a detonation similar in appearance to the near surface burst Trinity test of 1945. The scene then cuts to footage of a mushroom cloud and then to a final cut of a slowed close-up section of the incandescence in the nuclear explosion. This political advertisement is considered one of the most controversial ever made and considered to be an important factor in Johnson's landslide victory over Barry Goldwater. This commercial was an important turning point in political and advertising history.

Summary

The Kennedy and Johnson administrations grappled with the challenge of making nuclear policy both better and usable. “Flexible response” attempted to help level the playing field across the full spectrum of war. Not every flare-up was going to drive a total nuclear war response. Therefore, “flexible response” was devised to ensure leaders had other options to include conventional war. Additionally, there was a growing recognition that the USSR and China were different countries with unique objectives which called for different options for each country. “Flexible response” took the shape of multiple options across a wide range of target sets.

Secretary McNamara and the arms control community levied MAD as a method to hold a vast majority of an enemy’s targets as risk, thereby reducing the incentive for a first-strike mentality while ensuring a stable U.S. nuclear force posture for deterrence. This came about from the emphasis and subsequent failure of the “no cities” doctrine and counterforce thoughts that were perceived as threatening by the Soviets. MAD created a strategy that is still used today and has the same principles of deterrence associated with the initial use. Although MAD

seemed potentially very dangerous, it has produced an enduring peace until recently.

Once MAD was woven into the fabric of international politics, a sense of "where do we go from here" gradually emerged from both the U.S. and USSR. The PTBT gave both the U.S. and USSR a reasonable path to negotiations and self-reflection that created stability for the future. Ultimately, PTBT allowed for discussion to begin regarding the true limitations of nuclear weapons as well as the framework to start down the path of disarmament.

Chapter 4

President Richard M. Nixon:

January 20, 1969 – August 9, 1974

President Gerald R. Ford August

9, 1974 – January 20, 1977

The Cold War: 1969–1977

> *I don't want Washington. I don't like the feel of Washington. I don't like that goddamn command airplane or any of this. I don't believe in all that crap. I think the idea of building a new system around Washington is stupid.*
>
> – President Richard M. Nixon

> *We have known since the age of nuclear energy began more than 30 years ago that this source of energy had the potential for tremendous benefits for mankind and the potential for unparalleled destruction.*
>
> – President Gerald R. Ford

President Richard M. Nixon took over the presidency at the beginning of 1969, which was the start of détente with the USSR. Détente was defined in the late 60s and 70s as the easing of strained relations, especially political relations between the U.S. and the Soviets. One can point to one of President Nixon's core elements of foreign policy which may have been a contributing factor to easing tensions–his desire to avoid nuclear war. During Nixon's tenure, his administration promoted better dialogue with the Soviet government, including consistent summit meetings and discussions over arms control and other bilateral agreements.[1]

The Nixon administration began with the conviction that a global structure of peace required a strong but redefined American role. While the cooling of the Cold War was happening, the Nixon Doctrine came out in the middle of 1969. Nixon stated that "the United States would assist in the defense and developments of allies and friends," but would not

[1] Michael H. Hunt, *The World Transformed: 1945 to the Present* (New York, NY: Oxford University Press, 2004), 313.

"undertake all the defense of the free nations of the world." This doctrine intended that each ally oversaw its general security, but the U.S. would act as a nuclear umbrella, guaranteed by a nuclear weapon state to defend a non-nuclear allied state when requested. The doctrine argued for the pursuit of peace through a partnership with American allies.

Strategic Sufficiency

Until the late 1960s, the U.S. possessed strategic forces that provided a clear margin of superiority compared to the USSR. While U.S. forces were held at existing levels, the USSR moved forward to develop strong and sophisticated strategic forces that approached and, in some categories, exceeded the U.S. in numbers and capability. President Nixon and National Security Advisor Henry Kissinger announced the policy of Strategic Sufficiency in January 1969 and appeared to accept that nuclear parity with the USSR was a fact. Immediately following the announcement, Kissinger launched several interagency studies evaluating U.S. military posture and the balance of power with the objective of developing alternative military strategies.

Along with détente and Strategic Sufficiency, a period of calm permitted a move to the negotiation tables. The PTBT had started the dialog between the USSR and the U.S. and now much broader arms negotiations could take shape.

NSDM-242

The Nixon Administration completed multiple studies in 1972-1973 on how to provide more flexibility concerning the employment of U.S. nuclear weapons. In January of 1974, President Nixon approved NSDM-242, which intended to add more "limited employment options" to help manage escalation of SIOP-63. NSDM-242 stated, "Should conflict occur, the most critical employment objective is to seek early war termination, on terms acceptable to the United States and its allies, at

the lowest level of conflict feasible. This objective required planning a wide range of limited nuclear employment options which could be used in conjunction with supporting political and military measures (including conventional forces) to control escalation."

The related Nuclear Weapons Employment Policy (NUWEP) of April 1974 provided targets to accomplish various goals; for example, the document stated that United States nuclear forces must possess the ability to destroy 70 percent of the industrial capacity the Soviet Union needed to recover following a war. These documents formed the basis of SIOP-5 completed in January of 1976, sometimes called the Schlesinger Doctrine after Secretary of Defense James Schlesinger.[2]

Schlesinger Doctrine

In January of 1974, the U.S. Secretary of Defense James Schlesinger announced a major re-alignment of the U.S. nuclear strike policy. This doctrine outlined a broad assortment of counterforce options against a wide variety of potential enemy targets. Major changes were implemented from earlier SIOP policies of both the Kennedy and Johnson administrations that focused on MAD and typically included only one or two "all out" plans of action that used the entire U.S. nuclear arsenal in a single strike. A primary element of the new plan was a variety of limited strikes only against enemy military targets while ensuring the survivability of the U.S. second-strike capability, which was intended to leave an opening for a negotiated settlement.

Strategic Arms Control

The strategic nuclear forces of the U.S. and USSR were changing in character in 1968. The total number of U.S. missiles had been static since 1967 at 1,054 ICBMs and 656 SLBMs. There was, however, an increase in some missiles with multiple independently targetable reentry

[2] Ball, "U.S. Strategic Forces: How Would They Be Used?", 31-60

vehicle (MIRV) warheads being deployed. MIRVs carried multiple nuclear warheads, often with dummies, to confuse anti-ballistic missile (ABM) systems, making MIRV defense by ABM systems increasingly difficult and expensive.[3]

The Strategic Arms Limitation Talks (SALT I) Agreement was signed on May 26, 1972. SALT I held the number of strategic ballistic missile launchers at current levels and provided for the addition of new SLBM launchers only after the same number of older ICBM and SLBM launchers had been dismantled.[4] Land-based ICBMs that were in the range from the northeastern border of the continental U.S. to the northwestern border of the continental USSR were limited by the treaty.[5] Additionally, SALT I restricted the number of SLBM-capable submarines that NATO and the U.S. could operate to 50 with a maximum of 800 SLBM launchers between them. If the U.S. or NATO were to increase that number, the USSR could respond by increasing its arsenal by the same amount.

After a lengthy stalemate, the first results of SALT I came in May of 1971 when an agreement was made for ABM systems. Further discussion carried the negotiations to an end on May 26, 1972, in Moscow when President Nixon and General Secretary of the Central Committee (CC) of the Communist Party of the Soviet Union (CPSU) Leonid Brezhnev signed both the ABM Treaty and the Interim Agreement Between U.S. and USSR on Certain Measures With Respect to the Limitation of Strategic Offensive Arms.[6] A number of approved

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[3] U.S. Arms Control and Disarmament Agency, Documents on Disarmament, 1969–1972, Washington, D.C.: U.S. Government Printing Office
[4] U.S. Arms Control and Disarmament Agency. Documents on Disarmament, 1969–1972, Washington, D.C.: U.S. Government Printing Office
[5] U.S. Arms Control and Disarmament Agency. Documents on Disarmament, 1969–1972. Washington, D.C.: U.S. Government Printing Office
[6] U.S. Arms Control and Disarmament Agency. Documents on Disarmament, 1969–1972. Washington, D.C.: U.S. Government Printing Office

statements were also completed. This assisted in improving relations between the U.S. and the USSR.

Safeguard Program

The Safeguard Program was a U.S. Army ABM system designed to protect the USAF Minuteman ICBM silos from attack by first intercepting an incoming missile outside the atmosphere with Spartan missiles. In the event the Spartan failed, a short-range Sprint missile would intercept the enemy's missile inside the earth's atmosphere. This, in turn, was to preserve the U.S.'s nuclear deterrent. This program was intended primarily to protect against the tiny Chinese ICBM fleet, a limited attack from the USSR, and several other limited launch situations. A large or full-scale attack by the USSR would simply overcome the ABM system, which was a deliberate argument to ensure the Soviets did not consider it as a strategic threat. Safeguard was designed to allow regular upgrades to software and hardware and provide similar limited coverage over the entire U.S. over time.

During the Safeguard Program, talks between the U.S. and USSR originally started by President Johnson, continued with respect to arms control. The ABM Treaty of 1972 limited the U.S. and USSR to two ABM sites each. Safeguard was scaled back to sites in North Dakota and Montana, abandoning initial work at a site in Missouri and canceling all other planned bases. Construction on the two remaining bases continued until 1974 when an additional agreement limited both countries to a single ABM site. The Montana site was abandoned with the main radar partially completed. The remaining base in North Dakota, the Stanley R. Mickelsen Safeguard Complex, became active on April 1, 1975, and was fully operational on October 1, 1975. By that time the House

Appropriations Committee had already voted to deactivate it.[7] The base was shut down on February 10, 1976.

Media Influence

Although the fear of nuclear war was still active in the minds of the public, it was not the focus of media coverage. During this timeframe, the media focused instead on nuclear power and the nuclear industry, which it covered with a negative bias. Multiple articles and books were written on how the nuclear industry was suppressing the flow of information to the public, and subsequently the criticism of the nuclear power industry began. Despite the fact that no major movies or television shows were produced at this time focusing on nuclear weapons, the Three Mile Island incident would put an end to that.

Summary

Presidents Nixon and Ford saw a change in the strategic climate and the softening of the Cold War. Détente in the Cold War had started in the early 1970s with the lessening of tensions between the East and West. Easing pressures along with domestic reform in the USSR worked together to achieve the end of communism in Eastern Europe and eventually the USSR altogether.[8] The détente period was categorized by the signing of treaties such as SALT I and the Helsinki Accords, which were aided in improving relations between the Communist bloc and the West. Another treaty, START II, was discussed but never ratified by the U.S. Historians continue to debate as to how effective the détente period was in achieving peace.[9] The lessening of tensions that accompanied

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[7] John W. Finney, "Safeguard ABM System to Shut Down," *New York Times*, 25 November 1975.
[8] Hunt, *The World Transformed: 1945 to the Present*, 313.
[9] Branislav L. Slantchev, "The Rise and Fall of Détente" (lecture, University of California San Diego, San Diego, CA 2014).

détente and the stable nuclear deterrence regime heled keep the Cold War from turning hot.

Although most people associate nuclear planning flexibility with the Kennedy Administration and Secretary McNamara, it is imperative to point out that the Nixon Administration and Secretary Schlesinger enabled a robust system that was grounded in ensuring flexible options were available across the full spectrum of conflict. Specifically, the creations of NSDM-242 developed plans for limited employment options which would enable the U.S. to conduct selected nuclear operations, in concert with conventional forces, in order to protect vital U.S. interests and limit enemy capabilities to continue aggression. Also, these options would enable the U.S. to communicate to the enemy a determination to resist aggression, coupled with a desire to exercise restraint. The Nixon Administration, with NSDM-242, was the start of our current modern system, using both conventional and nuclear forces to safeguard flexible options and build a complete warfighting system.

Chapter 5

President James E. Carter, Jr.:

January 20, 1977 – January 20, 1981

The Cold War: 1977–1981

For this generation, ours, life is nuclear survival, liberty is human rights, the pursuit of happiness is a planet whose resources are devoted to the physical and spiritual nourishment of its inhabitants.

– President James E. Carter

James E. "Jimmy" Carter came into the presidency at a time of turmoil concerning counterforce capabilities. Both the U.S. and the USSR were looking at upgrading and modernizing their respective missile forces that had multiple independently targetable reentry vehicles (MIRV) already in production. By 1980, America's self-confidence was faltering after the dual shocks of Vietnam and Watergate and confusion set in on how and what made deterrence work, which led to the military imbalance.[1] ICBM vulnerability in 1980 was the greatest cause for concern, thus creating a disparity in strategic balance.

Similarly, the balance between military and civilian leadership was in flux. President Carter's credibility with the U.S. military was non-existent, despite his academy education and service aboard a nuclear submarine. At the start of President Carter's term, he showed an aversion to nuclear weapons and ideas of minimum deterrence, and he dismissed notions of limited nuclear war.[2] This turmoil resulted in the Carter Administration searching for better targeting options, thus creating limited strike options against political and economic targets rather than strictly military targets.

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[1] Freedman, *The Evolution of Nuclear Strategy*, 375.
[2] Freedman, *The Evolution of Nuclear Strategy*, 375.

SALT II

SALT II was a sequence of talks between U.S. and USSR representatives from 1972 to 1979 that sought to curtail the building of strategic nuclear weapons. SALT II was a continuation of the SALT I talks that Presidents Nixon and Ford started. SALT II created the first nuclear arms treaty that assumed real reductions in delivery vehicles of strategic forces to 2,250 for both countries.

The SALT II Treaty barred the development of new missiles (a new missile was defined as any missile with any key parameter 5 percent better than a currently deployed missile). Both the U.S. and USSR were required to limit any new strategic missile development and construction. Similarly, this agreement would limit the quantity of MIRVed ballistic missiles and long-range missiles to 1,320. Still, the U.S. preserved its most crucial new programs such as the Trident missile and cruise missiles. President Carter intended to use these missiles as his primary defensive weapons, as they were too slow to have first strike capability. In return, the USSR could retain all 308 of its heavy SS-18 ICBM launchers.

A breakthrough for this treaty happened at the Vladivostok Summit meeting in November 1974 when President Ford and General Secretary Brezhnev agreed on the basic framework for the SALT II agreement. The fundamentals of this agreement were stated to be in effect through 1985. Although an agreement to limit strategic launchers was reached in Vienna in June of 1979 and was signed by General Secretary Brezhnev and President Carter, six months later the USSR invaded Afghanistan, and the U.S. discovered a Soviet Combat Brigade stationed in Cuba. The treaty was never ratified by the U.S. Senate but was honored by the U.S. until 1986.

PD/NSC-18

President Carter's first set of instruction on nuclear weapons was PD/NSC-18 in August of 1977. PD-18 set nuclear force posture in the U.S. national strategy and supported essential equivalence, which rejected a "strategic force posture inferior to the Soviet Union" or a "disarming first strike" capability, and also sought a capability to execute "limited strategic employment options."[3]

PD-18 was given to the Pentagon to get answers on targeting policy but also to give direction for nuclear strategy. Ordering a mainstream "competitive co-existence" strategy toward relations with the USSR, PD-18 stressed the U.S.'s critical advantages (economic, technological, and political). This needed to be done while embracing efforts to counterbalance Soviet impact in key areas. The Carter administration wanted collaboration to avoid crises and hostility as well as arms control arrangements that improved stability and reduced strategic competition. To support those goals, PD-18 included initial guidance on military strategy, including strategic force objectives and plans. Consequently, rather than seeking absolute strategic superiority, which could have led to a no-win arms race, President Carter sought a stance of essential equivalence, avoiding a first strike capability and highlighting the importance of strategic stability. Nonetheless, to offset the USSR's strategic advantages, preserving essential equivalence would mean retaining or developing the strategic advantages that the U.S. already enjoyed.

PD-18 assured separate instructions to Secretary of Defense Harold Brown on targeting policies, and a directive for follow-on studies would soon reach the military. Aside from asking for a study of current

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[3] "PD/NSC 18: United States National Strategy, 24 August 1977," Federation of American Scientists, accessed March 18, 2018, https://www.cia.gov/library/readingroom/docs/CIA-RDP97M00248R000400660001-4.pdf

targeting policy and recommended criteria, National Security Advisor to President Carter, Zbigniew Brzezinski requested examination of multiple options, including a strike that targeted 70 percent of all Soviet economic, political, and military recovery resources and 90 percent of "all other identified Soviet military targets and related command, control, and communications facilities."[4] Moreover, NSA Brzezinski sought an analysis of capabilities for the hard-target kill, war-time capabilities to find and assault targets using reserve forces, and the future of the triad, among other topics.[5]

When Secretary Brown followed up PD-18 requests, he commissioned the Nuclear Targeting Policy Review (NTPR), a study led by former State Department official, Leon Sloss.[6] Although key findings remain classified, a major conclusion on nuclear deterrence survived unscathed. This conclusion flowed from a controversial supposition that the Soviets had a concept of victory, even in nuclear war. That is, U.S. intelligence and Soviet experts alike agreed that the "Soviets seriously plan to face the problems of fighting and to survive a nuclear war should it occur, and of winning, in the sense of having military forces capable of dominating the post-war world."[7]

NSC/PD-59

PD-59 was signed by President Carter in July of 1980. This was during a period of sharp Cold War tensions owing to the USSR invasion of Afghanistan, instability in the Middle East, and former tensions over China policy, human rights, the Horn of Africa, and Euromissiles. PD-59

[4] The National Security Archive at George Washington University, "Jimmy Carter's Controversial Nuclear Targeting Directive PD-59 Declassified," accessed 13 March 2018, https://nsarchive2.gwu. edu/nukevault/ebb390/#_edn7
[5] The National Security Archive, Jimmy Carter's PD-59.
[6] The National Security Archive, Jimmy Carter's PD-59.
[7] The National Security Archive, Jimmy Carter's PD-59.

aimed at giving U.S. presidents more flexibility in planning for and executing a nuclear war.

PD-59 wanted a nuclear force stance that ensured a "high degree of flexibility, enduring survivability, and adequate performance in the face of enemy actions."[8] If deterrence failed, the U.S. "must be capable of fighting successfully so that the adversary would not achieve his war aims and would suffer costs that are unacceptable."[9] PD-59 completed this by calling for pre-planned nuclear strike options and capabilities for fast development of target plans against such key target categories as military and control targets, including nuclear forces, command-and-control, stationary and mobile military forces, and industrial facilities that supported the military. Moreover, the directive stipulated strengthened command-control-communications and intelligence (C3I) systems.[10]

Both Secretary Brown and NSA Brzezinski's advisers reached agreement on the language for PD-59, while Pentagon officials were drafting the detailed guidance for military planning that would be consistent with the directive and would further supplant the 1974 NUWEP. The Pentagon document excluded all language about target categories, but PD-59 helped fill in some of the blanks, for example, regarding countervailing strategy and military and control targets.

Consistent with PD-59, the NUWEP emphasized flexibility, a capability to design employment plans on short notice, and pre-planning, so that policymakers could respond "with selectivity to less than an all-out Soviet attack." A key element in both was the concept of building blocks, which could be used as separate targeting options or could be combined to provide larger and more comprehensive plans. Moreover, in keeping with the PD, the NUWEP included provisions for endurance,

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[8] The National Security Archive, Jimmy Carter's PD-59.
[9] The National Security Archive, Jimmy Carter's PD-59.
[10] The National Security Archive, Jimmy Carter's PD-59.

reserve forces, periodic exercises to “test the suitability of implementing pre-planned and ad hoc nuclear weapons plans," and "continuing policy review.”[11]

Countervailing Strategy

The original U.S. MAD doctrine was modified in July of 1980, with President Carter’s adoption of countervailing strategy with PD- 59. The designer of countervailing strategy, Secretary Brown, stressed that the intentional response to a USSR attack was no longer to bomb Soviet cities. Instead, the plan was to kill Soviet leadership first, then attack military targets, with hopes of a Soviet surrender before the destruction of the USSR and also the U.S. This modified form of MAD was seen as a way to win nuclear war while continuing the prospect of assured destruction for at least one party.

Strategic Modernization

President Carter withdrew SALT II from the Senate for ratification. Now, without a strategic arms limitation agreement, the president was able to influence the largest peacetime military buildup in history, which was initiated with the 1980 defense budget. The original purpose of the buildup was to secure the ratification of SALT II, but this plan seemed to have backfired because the buildup had quite the opposite effect. Strategic modernization, to include the new Peacekeeper missile (MX) was a sticking point for Congress to use to ratify SALT II, but in the end, the treaty was withdrawn, and the FY1980 budget increased substantially for strategic modernization.

Media Influence

Within weeks of approval, leaks of PD-59 and its Top-Secret contents provided front-page stories in *The New York Times* and the

[11] The National Security Archive, Jimmy Carter’s PD-59.

Washington Post that stoked wide-spread fears about PD-59's implications for unchecked nuclear conflict. For many Americans, the Soviet occupation of Afghanistan marked the end of détente and the beginning of a second cold war with a new and more virulent nuclear arms race in the near future.

Also, nuclear power was at the forefront of the public's mind. The Three Mile Island accident happened in March of 1979, and the alarmist news coverage about it increased and strengthened the fear of nuclear power in the U.S. and around the world. This media coverage and growing fear effectively ended the development of nuclear power, setting America and many nations on a more coal-reliant energy path—which has done incalculably more harm to human and environmental health.[12]

Summary

President Carter's tenure took place during a time when sweeping world changes were occurring—a change from détente to the heating up of the Cold War. International moves by the USSR, specifically the invasion of Afghanistan prompted major changes to strategic arms. Without the ratification of the SALT II treaty, President Carter started the arms race that would lead to the Reagan administration's even bigger defense budget. Freedman in his book *The Evolution of Nuclear Strategy* states "All these factors—the perplexing growth in Soviet missile forces, the critique of arms race theories relying on over-exuberant weapons designers and intelligences estimators, the uncertainties over Soviet intentions, the moral qualms, and the confusion of technological progress—all impacted on the process that was supposed to consolidate stability in strategic relations between the super-powers and advance

[12] David Ropeik, "The Rise of Nuclear Fear-how We Learned to Fear the Radiation," Scientific America (blog), 15 June 2012, https://blogs.scientificamerican.com/guest-blog/the-rise-of-nuclear-fear-how-we-learned-to-fear-the-bomb/

political relations. In consequence, the experience of arms control was extremely unsatisfactory."[13]

President Carter tried to enhance deterrence by improving the capacity for a prolonged but limited nuclear war, through changing primary targets to what the Soviet leadership would find most valuable. Top targets now included leadership and military forces, and the tools used to control the war after its start. More flexibility was built into the system to concentrate on the first faltering steps of nuclear war versus the ending. This however led to confusion as to why the U.S. would want to engage in an approach that had the potential to prolong the war by using limited strikes.

[13] Freedman, *The Evolution of Nuclear Strategy*, 338.

Chapter 6

President Ronald W. Reagan:

January 20, 1981 – January 20, 1989

Heating the Cold War: 1981–1989

I can't believe that this world can go on beyond our generation and on down to succeeding generations with this kind of weapon on both sides poised at each other without someday some fool or some maniac or some accident triggering the kind of war that is the end of the line for all of us. And I just think of what a sigh of relief would go up from everyone on this earth if someday–and this is what I have–my hope, way in the back of my head–is that if we start down the road to reduction, maybe one day in doing that, somebody will say, 'Why not all the way? Let's get rid of all these things'.

– President Ronald W. Reagan

President Ronald W. Reagan passed through a bumpy period of international politics in the 1980s. The U.S. and USSR looked to be moving towards a second cold war after the election of President Reagan, who had hardline views about the collapse of arms control such as SALT II and the communist rule of Eastern Europe. The world was on fire from mini-crises which exhausted strategists with wargames and exercises in crisis management.

During President Reagan's administration, a desire to escape the nuclear dilemma was apparent, but the situation in the 1980s was dependent on nuclear threats and to achieve security the threats had to lead to mutual annihilation.[1] While turmoil was running rampant throughout the world, the administration explored a variety of different options in sequence to keep nuclear war at bay.

NSDD-13

NSDD-13 stated that the U.S. must be prepared to wage war successfully and that the U.S. and its allies must prevail. NSDD-13 was

[1] Freedman, *The Evolution of Nuclear Strategy*, 380.

not that different from PD-59, but the Reagan administration did not want to be justifying the most massive buildup in history based on President Carter's strategic policy. NSDD-13 did alter the priority of the targets as compared to PD-59.

During President Reagan's administration, there was a return to a robust counterforce strategy through NSDD-13. This was comprised of the development of strategic weapons systems that were more accurate and survivable. Some of these systems ultimately took the role of negotiating chips in arms control negotiations, while some, such as the B-2, remained highly classified, and could be used as a latent surprise in nuclear war. The B-2 was seen as a counter to the USSR deployment of mobile missiles, which only a manned bomber could find and attack.

NSDD-13 had some harsh rhetoric, like heavy chest-thumping and bolstering. If the U.S. were in a nuclear war, the U.S. would prevail. Even though these were very classified documents, and officials never intended them to see the light of the day. Nonetheless, there was extreme attention paid to the rhetoric that the policy expressed. NSDD-13 became the basis for how the U.S. talked about nuclear weapons in public discourse.

Scowcroft Commission

In 1983, General Scowcroft completed his work on the Scowcroft Commission with recommendations to President Reagan. President Reagan adopted many of the recommendations given in the report. The commission recommended a return to small, single-warhead missiles, because large land-based missiles in silos, considered alone, are both more susceptible and more attractive as targets than a force of small, mobile, flexibly based single-warhead missiles. The latter, moreover, would ease tensions by posing less of a threat to the enemy as 'first-

strike' weapons, particularly if both sides converted their land-based forces.[2]

This recommendation led the commission to urge future arms control limits be applied to warheads, specifically on MIRVs and on the overall number of missiles, rather than to missile launchers. Also, the Commission's most significant contribution was the dismissal of the notion of the "window of vulnerability." The Commission argued that no single part of the triad could be categorized as vulnerable—that is, analyzed in isolation from the other two parts. But the Committee on the Present Danger (CPD) whose stated single goal is "to stiffen American resolve to confront the challenge presented by terrorism and the ideologies that drive it" through "education and advocacy," was focused on U.S. vulnerabilities.[3] The CPD included 33 official members during the Reagan administration, among whom were President Reagan himself, the Director of Central Intelligence William Casey, National Security Advisor Richard V. Allen, United States Ambassador to the United Nations Jeane Kirkpatrick, Secretary of the Navy John Lehman, Secretary of State George Shultz, and Assistant Secretary of Defense Richard Perle. Even though the Scowcroft Commission and the CPD were at odds, the synergies the triad realized made it very difficult for a Soviet decision maker to initiate a first strike without facing the unacceptable consequences from the U.S. triad.[4]

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[2] Tom Wicker, "In the Nation; Mirv and the Window," *New York Times*, 19 April 1983, http://www.nytimes.com/1983/04/19/opinion/in-the-nation-mirv-and-the-window.html.

[3] Committee on the Present Danger, "Mission," http://www.committeeonthepresentdanger.org/index.php?option=com_content&view=article&id=50&Itemid=54.

[4] George J. Tenet to JH, letter, 18 May 1983; Scowcroft Commission Report

Strategic Defense Initiative

The Strategic Defense Initiative (SDI) was derisively nicknamed "Star Wars" by the media after the popular 1977 film by George Lucas. SDI proposed a missile defense system envisioned to protect the U.S. from attack by enemy ICBMs and SLBMs. The concept was first announced publicly by President Reagan in March of 1983.[5] President Reagan was an outspoken critic of the MAD doctrine, which he defined as a "suicide pact" and called upon American scientists and engineers to develop a system that would render nuclear weapons obsolete.

The Strategic Defense Initiative Organization (SDIO) was established in 1984 within the Department of Defense (DOD) to supervise development. A plethora of advanced weapons concepts, including lasers, particle beam weapons, and both ground and space-based missile schemes were looked at and studied. Various sensor, command and control, and high-performance computer systems required to control a system containing hundreds of combat hubs and satellites spanning the entire globe were blueprinted as a backbone of the architecture. Through the late 1980s, a number of these concepts were tested, and follow-on efforts and spin-offs continue to this day.

SDI was extremely controversial throughout its history and was criticized for threatening to destabilize what MAD had achieved and to possibly re-ignite an offensive arms race.[6] With the Cold War ending in the early 1990s, nuclear stockpiles were quickly reduced, and political backing for SDI collapsed. SDI significantly changed in 1993, when President Bill Clinton redirected the efforts to theatre ballistic missiles and renamed the agency as the Ballistic Missile Defense Organization (BMDO). In 2002, BMDO was renamed to the Missile Defense Agency (MDA).

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[5] "Missile Defense Milestones," Federation of American Scientists, accessed 28 February 2018, https://fas.org/missile-defense-system/.
[6] *The Greenwood Encyclopedia of International Relations*, vol 3, SDI s.v. 1600.

Nuclear Freeze

Starting in the early 1980s, the nuclear freeze movement, a global peace group, was involved in some local, national, and international efforts to persuade the U.S. and the USSR to stop the production, development, and deployment of nuclear weapons. The nuclear freeze movement arose at a time when both Americans and Europeans were increasingly concerned about the real likelihood of nuclear war between the two superpowers. President Reagan and his advisors talked openly about nuclear war while stating their dissatisfaction with SALT, which had markedly slowed the nuclear arms race.[7]

Even though nuclear freeze proponents had some successes, the movement was unable to complete its final goal, a freeze on the development of new nuclear weapons by the U.S. and the USSR. The Reagan administration effectively changed the undercurrents of the nuclear weapons debate by offering arms control options that went beyond the aims of the nuclear freeze movement. Furthermore, the U.S. nuclear freeze movement was unsuccessfully coordinated with the anti-nuclear movement in Europe. This lack of coordination hampered both movements, and nuclear freeze lost the opportunity to strengthen the efforts of the other. Finally, the thaw in U.S.-Soviet relations in the mid-1980s did much to alleviate the public's fear of nuclear war.

Intermediate-range Nuclear Forces

The Treaty Between the U.S. and the USSR regarding the Elimination of Intermediate-Range and Shorter-Range Missiles, commonly referred to as the Intermediate-Range Nuclear Forces Treaty (INF), required destruction of the countries' ground-launched ballistic

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[7] David Cortright and Ron Pagnucco, "Limits to Transnationalism: The 1980s Freeze Campaign," In Transnational Social Movements and Global Politics: Solidarity Beyond the State, edited by Jackie Smith, Charles Chatfield, Ron Pagnucco, (Syracuse, NY: Syracuse University Press, 1997).

and cruise missiles with ranges of between 500 and 5,500 kilometers, their launchers and associated support structures, and support equipment within three years after the treaty entered into force.[8]

In September of 1987, the two sides reached agreement in principle to complete the INF before the end of the year. In December of 1987, the treaty was signed by President Reagan and General Secretary Gorbachev. At the time of its signature, the treaty's verification regime was the most detailed and stringent in the history of nuclear arms control, designed both to eliminate all declared INF systems entirely within three years of the treaty's entry into force and to ensure compliance with the total ban on possession and use of these missiles.[9]

Media Influence

While President Reagan was denouncing the Soviets, the Pentagon's defense guidance was leaked to *The New York Times*. The combination of harsh public rhetoric and secret guidance about the possibility of a protracted nuclear war in which American nuclear forces must prevail made for a combustible mixture in the media and public.

The fear of nuclear war, which had receded after the Cuban Missile Crisis, returned during President Reagan's presidency. During one of his Saturday radio addresses, while completing a microphone check, President Reagan said, "My fellow Americans, I'm pleased to tell you today that I've signed legislation that will outlaw Russia forever. We begin

[8] Department of State, United States of America: Office of the Historian, "Treaty Between the United States of America And the Union of Soviet Socialist Republics on The Elimination of Their Intermediate-Range and Shorter-Range Missiles (INF Treaty)," accessed 17 April 2018, https://www.state.gov/t/avc/trty/102360.htm.

[9] Department of State, United States of America: Office of the Historian, "Treaty Between the United States of America And the Union of Soviet Socialist Republics on The Elimination of Their Intermediate-Range and Shorter-Range Missiles (INF Treaty)," accessed 17 April 2018, https://www.state.gov/t/avc/trty/102360.htm.

bombing in five minutes."[10] Contrary to the general misconception, the microphone error was not transmitted over the air, but rather leaked later to the general populace.[11] However, the Soviet Far East Army was allegedly put on alert; this was verified by the Pentagon but did not change Defense Readiness Conditions (DEFCON) for the U.S. in response to this incident.

In addition to growing public fears and President Reagan's rhetoric, the television program *The Day After* aired in 1983. The show, which depicted the prevalence of the populace's fear of nuclear war, portrayed an actual nuclear war. It was watched by one of the largest television audiences at that time and remains one of the highest rated TV movies of all times. While the show aired, the American Broadcasting Company (ABC) network had to staff phone lines offering emotional counseling to viewers.[12] Immediately following the TV movie an all-star panel discussion was hosted by Ted Koppel. The panel included Henry Kissinger, Robert McNamara, Carl Sagan, William F. Buckley, George Schultz, and others.

Multiple movies came out in the 1980s to spur the public's fear of nuclear war. The major movies were *The Atomic Café* (1982), *War Games* (1983), *Silkwood* (1983), *Testament* (1983), *Special Bulletin* (1983), *Threads* (1984), *Countdown to Looking Glass* (1984), *Def-Con 4* (1985), *Radioactive Dreams* (1985), *The Manhattan Project* (1986), and *Miracle Mile* (1989). These movies along with the push of "nuclear winter" by famous authors and scientists such as Carl Sagan created an environment of helplessness should a nuclear war exchange take place.

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[10] David Ropeik, "The Rise of Nuclear Fear-how We Learned to Fear the Radiation."
[11] Michael De Groote, "Ronald Reagan's 10 Best Quotes," *Deseret News*, 07 February 2011, https://www.deseretnews.com/top/103/10/Tear-down-this-wall-Ronald-Reagans-10-best-quotes.html.
[12] David Ropeik, "The Rise of Nuclear Fear-how We Learned to Fear the Radiation."

Additionally, *The Fate of the Earth* written by Jonathan Schell in 1982, was a book that focused on the consequences of nuclear war, which "forces even the most reluctant person to confront the unthinkable: the destruction of humanity and possibly most life on Earth."[13] *Fate of the Earth* was viewed as having had a significant influence regarding the nuclear disarmament movement.

The 1980s were encapsulated with the image of global thermonuclear war in movies, TV shows, and books. This popular culture material fed into the shaping of the public mood during this timeframe. This, in turn, created the framework within which strategists, diplomats, and the political leaders had to operate. It was within this complex framework of emotional, moral, and international security issues that President Reagan found himself. It was a very uncertain time.

Adding on to the media influence and fear of nuclear war, the Chernobyl accident made headlines throughout the world. The Chernobyl accident in 1986 was the outcome of an imperfect reactor design that was operated with inadequately trained personnel and was ultimately responsible for taking 30 lives. Furthermore, the disaster at the nuclear power plant in Ukraine was the product of a flawed Soviet reactor design coupled with serious mistakes made by the plant operators. It was a direct consequence of Cold War isolation and the resulting lack of a safety conscious culture.[14] The vivid and relentless coverage of the accident swayed public opinion around the world. Although deaths and health issues were reported due to the accident, a study 20 years later found that the greatest effects of the accident were psychological. Many

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[13] Johnathan Schell, *The Fate of the Earth* (Stanford, CA: Stanford University Press, 2000).

[14] International Atomic Energy Agency, *The 1986 Summary Report on the Post-Accident Review Meeting on the Chernobyl Accident (INSAG-1) of the International Atomic Energy Agency's (IAEA's) International*, Nuclear Safety Advisory Group, (Vienna: International Atomic Energy Agency, 1992).

scientists, governments, and groups tried to sway public opinion back to a positive view of nuclear energy, but most failed.

Summary

Throughout Ronald Reagan's presidency, strong rhetoric and policies were discussed and put into place. The strategic targeting review of the 1980s was not a one-time effort, but the start of an enduring process that resulted in a more joint working environment in which the SIOP was built, but this was just one of many changes during this dynamic period. Changes were happening on several fronts, and President Reagan's Modernization Program, which included making significant improvements to command, control, and communications, was getting the Kremlin's attention. In 1984, President Reagan and his administration would take stock of powerful new offensive weapon systems, the promise of strategic defenses, as well as continuing public fears of a thermonuclear exchange. As he prepared for his re-election campaign, President Reagan began to relax his language toward the USSR.

The SDI program with President Reagan's persistence and refusal to back away from it played a pivotal role in bringing the USSR back to negotiations. Secondly, it got the USSR to negotiate seriously about offensive reductions; and convinced the USSR that it simply could not compete against the U.S. Neither the U.S. or USSR had much luck in trying to push military capabilities as the real competition, but in the end, the economic and political competition against the USSR made them lose. President Reagan had the wit and the insight to recognize that the situation had profoundly changed and the Cold War was coming to an end.

Chapter 7

President George H. W. Bush:

January 20, 1989 – January 20, 1993

End of the Cold War: 1989–1993

I spelled out a strategic concept, guided by the need to maintain the forces required to exercise forward presence in key areas, to respond effectively in crises, to maintain a credible nuclear deterrent, and to retain the national capacity to rebuild our forces should that be needed.

– President George H. W. Bush

When President George H. W. Bush came into office in 1989, the Cold War was changing. Eastern Europe was still under communist control, and changes in rhetoric from Gorbachev were encouraging, but not enough. The collapse of the USSR was underway, but until the final destruction was complete, the U.S. proceeded with operations as normal during the Cold War.

President Bush's strength was in international affairs. The first couple of months following his election, the president did not change much or rock the boat. By the end of President Bush's first year in office, he was overseeing the end of the Cold War.[1] President Bush would make large changes to the nuclear enterprise, comparable to the years before in the Cold War.

Malta Summit

The Malta Summit included a meeting between President Bush and Soviet General Secretary Gorbachev in December of 1989, just a couple weeks after the fall of the Berlin Wall. It was the second meeting of the two following a meeting that included President Reagan in New York in December 1988. The primary purpose of the summit was to provide the U.S. and the USSR an opportunity to debate the fast changes

[1] Freedman, *The Evolution of Nuclear Strategy*, 407.

taking place in Europe with the impending fall of the Iron Curtain, which had separated the Eastern Bloc from Western Europe for 40 years. Despite the meeting and discussion that took place, no agreements were signed at the Malta Summit. During the summit, President Bush and General Secretary Gorbachev would declare an end to the Cold War. Whether it was actually over is still debated, but the summit did lead to negotiations on reductions in conventional forces. Soon, a new Strategic Arms Reduction Treaty (START) would be complete resulting in a profound impact on nuclear planning.

START

START I was a bilateral treaty between the U.S. and USSR which spotlighted the reduction and limitation of strategic offensive arms. The treaty was signed in July of 1991 and entered into force in December of 1994.[2] The treaty limited its signatories from deploying more than 6,000 nuclear warheads atop a total of 1,600 ICBMs and bombers. START negotiated the biggest and most complex arms control treaty in history, and its final enactment in late 2001 resulted in the removal of nearly 80 percent of all strategic nuclear weapons then in existence. Proposed by President Reagan, it was renamed START I after negotiations began on the second START treaty.

National Security Review 12

During 1989, Joint Staff (JS) strategists repeatedly pressed for greater emphasis on regional planning. National Security Review 12 (NSR 12) was issued by President Bush in March of 1989, which directed a review of national defense strategy. JS members in this review argued that with the substantially reduced risk of a deliberate Soviet attack on

[2] U.S. Arms Control and Disarmament Agency, Documents on Strategic Arms Reduction Treaty (START I): Executive Summary, Washington, D.C.: U.S. Government Printing Office.

Western Europe and increasing non-Soviet threats in the Third World, the U.S. should shift its focus not only from Europe but also from the USSR's role in the Third World.[3] Instead, the U.S. should develop strategies for dealing with regionally based Third World threats. The JS mostly emphasized the emerging significance of the Pacific Rim and Central and South America to U.S. security interests. In their emphasis on the necessity of preparing for regional contingencies outside Europe, the JS representatives unsuccessfully opposed the European focus of Mr. Paul D. Wolfowitz, who chaired the Department of Defense NSR 12 Steering Committee.[4]

Work on NSR 12 finished inconclusively. JS planners focused on the National Military Strategy Document (NMSD) across 5 FYs, beginning in 1992 and ending in 1997, in an effort to change strategic priorities. They argued that although its capabilities meant that the USSR would remain the principal threat to the U.S. through the 1990s, this threat was declining while that of regional instability, especially in the Middle East and Latin America, was increasing. They recognized, too, that declining defense budgets and changes in alliance relationships placed increasing constraints on forward basing.[5]

Presidential Nuclear Initiatives

Faced in 1991 with the imminent breakup of the USSR and the danger of loss of control over non-strategic nuclear weapons, President Bush proposed what has come to be called the Presidential Nuclear Initiatives (PNIs). A prominent part of these initiatives was a set of parallel unilateral actions by the U.S. and USSR to withdraw from foreign deployments and eliminate both ground-launched and ship-borne

[3] Joint Chiefs of Staff, The Development of the Base Force 1989-1992, (Washington, DC: Government Printing Office, 1995),3.
[4] JCS, NSR 12 Working Papers, 3.
[5] JCS, The Development of the Base Force 1989-1992, 3.

tactical nuclear weapons. Here, too, new ground was broken in the use of non-treaty arms control to respond very quickly to the changed security environment. President Bush's PNIs instituted the most extensive nuclear arms reductions in history.

As a result of the PNIs, the U.S. removed and demolished 2,000 ground-launched nuclear artillery shells and short-range ballistic missiles (SRBM), all theater nuclear weapons (TNW) on Navy surface ships, attack submarines and on land-based naval aircraft, all nuclear depth charges, de-alerted strategic bombers, and canceled planned nuclear systems. By the mid-1990s, the stockpile of TNWs fell to below 1,000 warheads. Between 1990 and the end of 1994 (when the START Treaty entered into force), the U.S. nuclear stockpile of active and inactive warheads fell from 21,392 to 10,979, a 50 percent reduction. No period in U.S. nuclear history or world history witnessed such an enormous reduction of nuclear weapons in such a short time. The speed and decisiveness of the decision processes involved were equally unique.

The PNI was inspired—and made possible—by an astonishing confluence of factors:

- a U.S. President who was fully expert in, and placed a high priority on, national security issues, who enjoyed historically high approval ratings, and who had a vision of the international future

- a national security team at the Cabinet level and below that shared (or at least accepted) the President's vision and could work together effectively

- world-changing developments in Central and Eastern Europe and the Soviet Union, whose pace was astonishing—and accelerating

- the decisive U.S. victory in Operation Desert Storm that underscored the strength of U.S. conventional military capabilities

- declining support among the NATO allies and Congress for nuclear weapons modernization.[6]

Out of all of these factors, the most critical factors were President Bush's leadership and the geopolitical changes in Central-Eastern Europe and the USSR. Those variations did not permit long debate or great caution. They demanded—but also allowed—swift, historical action. President Bush and his team saw in the initiatives both as a need and an opportunity to organize and were able to grasp the opportunity.[7]

A final PNI measure on strategic forces addressed the organization of the DOD. President Bush announced that Strategic Air Command (SAC) would be replaced by a joint command, the United States Strategic Command (USSTRATCOM), that would be responsible for all three legs of the U.S. strategic nuclear triad. Several military leaders had been interested in this concept for some years, and Congress had recommended it in the Goldwater-Nichols Department of Defense Reorganization Act of 1986.[8] Further, the SIOP Review made clear the need for a single command able to develop requirements as well as targeting plans for the entire strategic force.[9]

START II

START II was a bilateral treaty between the United States of America and Russia on the Reduction and Limitation of Strategic Offensive Arms. It was signed by U.S. President George H. W. Bush and Russian President Boris Yeltsin in January of 1993 and banned the use

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[6] Progressive Management, "Presidential Nuclear Initiatives of 1991-1992: Cold War Termination of Strategic Bomber Alerts, Reductions in Nuclear Weapons, Soviets, Berlin Wall, Bush, Cheney, Scowcroft, Gorbachev, Yeltsin," accessed 10 March 2018, https://www.scribd.com/book/300696423/Presidential-Nuclear-Initiatives-of-1991-1992-Cold-War-Termination-of-Strategic-Bomber-Alerts-Reductions-in Nuclear-Weapon.
[7] Progressive Management, The Presidential Nuclear Initiatives.
[8] Progressive Management, The Presidential Nuclear Initiatives.
[9] History, United States Strategic Command, History of the United States Strategic Command, 1 June 1992– 1 October 2002.

of MIRVs on ICBMs. Hence, it is often quoted as the De-MIRV-ing Agreement. It never entered into effect, although it was ratified by the U.S. Senate in January of 1996. Russia ratified START II in April of 2000 but in June of 2002 withdrew from the treaty in response to U.S. withdrawal from the ABM Treaty.[10]

Media Influences

The shift from a total nuclear war between superpowers was diminishing, but the thoughts and imagination of nuclear terrorism, the potential loss of nuclear weapons, and rogue non-state actors took hold of the media. Tom Clancy, an American novelist, best known for his technically detailed espionage and military science storylines set during and after the Cold War, adapted multiple best-selling books to movies in the late 1980s to early 2000s. In one of his best-selling books, *The Hunt for Red October*, a rogue Soviet naval submarine captain takes a brand new nuclear-powered submarine and defects to the U.S. by almost starting World War III. The book received praise from President Reagan and was adapted into a film in 1990. Many of Tom Clancy's novels covered nuclear terrorism or rogue non-state actors acquiring nuclear weapons and trying to employ them.

Along similar lines as Tom Clancy's novels, the movie *Under Siege* (1992) portrayed an ex-Navy Seal turned cook as the only person who could stop a group of terrorists after they seized control of a U.S. battleship with nuclear weapons on board. Another movie that played a nuclear detonation and a threat of nuclear war by a non-state or terrorist group, was *Terminator 2: Judgment Day* (1991), where artificial intelligence takes over the U.S. nuclear arsenal and starts World War III with Russia.

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[10] U.S. Arms Control and Disarmament Agency, Documents on Strategic Arms Reduction Treaty (START II): Executive Summary, Washington, D.C.: U.S. Government Printing Office.

During this time, the media and the public started to combine nuclear and environmental issues together, thus laying the foundation of the nuclear environmentalist. With Chernobyl and Three Mile Island in the forefront of nuclear environmental disasters in the past ten years, many media outlets and groups started to take up the cause and build the initial cadre of global warming activists.

Summary

During the tenure of President Bush, foreign policy was a key focus. He began his time in the White House as Germany was in the process of reunifying, as the USSR was collapsing, and as the Cold War was ending. President Bush was credited with helping to improve U.S.-Soviet relations. These relations were helped along by the PNIs set forth by President Bush for a show of peace and also a peace dividend.

The rise of different treaties and disarmament showed resolve to the now new Former Soviet Union (FSU). Having face-to face meetings along with multiple summits promoted President Bush's narrative that he feared the collapse of the Soviet Union could leave nuclear arms in dangerous hands. The START I treaty helped to calm nerves and was "a significant step forward in dispelling half a century of mistrust" between the former Soviets and the U.S.

Despite unprecedented popularity from the Gulf War and diplomatic triumph, Bush was unable to endure discontent at home due to a faltering economy, rising violence in inner cities, and continued high deficit spending. In November 1992 he lost a close election to Bill Clinton, who campaigned on the slogan "it's the economy, stupid."

Chapter 8

President William J. Clinton:

January 20, 1993 – January 20, 2001

Peace: 1993–2001

We would overwhelmingly retaliate if [the North Koreans] were to ever use, to develop and use nuclear weapons. It would mean the end of their country as they know it.

– President William J. Clinton

President William "Bill" J. Clinton was elected to the U.S. presidency from incumbent President Bush for reasons of economic discontent and fiscal responsibility as seen by the American people. A changing of the guard happened when the Cold War ended with no nuclear holocaust but rather a quiet ripple. The American people felt much safer in this new world. Thus, President Clinton had his administration focus on the faltering economy and domestic politics in the U.S.

Although the future of the U.S. was looking bright, a darker side was growing in the international community. A new world order was emerging and was defined as any new period of history evidenced by a dramatic change in world political thought and the balance of power. Western liberal norms were taking hold throughout the international community and unipolarity was shaped with the U.S. as the sole superpower because of the demise of the Soviet sphere of influence. But humanitarian disasters along with the collapse of social order gave rise to criminal activity that looked for Western military action and intervention to solve. In the 1990s, humanitarian issues played a historically unprecedented role in international politics. They were prominent mainly in relation to armed conflicts and the use of armed force, rather than other types of disaster, whether natural or man-made. President Clinton experienced great pressure to make America the sole provider of justice and help.

Nunn–Lugar Cooperative Threat Reduction

The U.S. and its allies started to worry that the nuclear weapons held in Soviet satellites could be taken or would fall into enemy hands. Housed within the Defense Threat Reduction Agency (DTRA) an initiative called the Cooperative Threat Reduction (CTR) Program, better known as the Nunn–Lugar Act, was based on the Soviet Nuclear Threat Reduction Act of 1991. The CTR was authored and co-sponsored by Senators Sam Nunn and Richard Lugar in 1986 during a congressional meeting. According to the CTR website, "the purpose of the CTR Program is to secure and dismantle weapons of mass destruction and their associated infrastructure in former Soviet Union states." Another explanation of the purpose of the program was "to secure and dismantle weapons of mass destruction in states of the former Soviet Union and beyond."[1]

CTR offered $400 million in funding and expertise for states in the former Soviet Union (including Russia, Ukraine, Georgia, Azerbaijan, Belarus, Uzbekistan, and Kazakhstan) to decommission nuclear, biological, and chemical weapon stores and stockpiles, as agreed by the USSR under disarmament treaties such as SALT I. After nuclear warheads were removed by the former Soviet Union (FSU) military from their delivery vehicles, Nunn-Lugar support provided equipment and supplies to destroy the missiles on which the warheads had been placed, as well as the silos which had housed the missiles. Warheads were then demolished in Russia, while the highly enriched uranium contained in them was transformed into commercial reactor fuel, later purchased by the U.S. under a different program.

Ballistic Missile Defense Act

The Ballistic Missile Defense Act (BMD) replaced the Missile Defense Act of 1991. The new act was designed to put the U.S. on a clear

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[1] Richard Lugar, "Cooperative Threat Reduction and Nuclear Security," *Georgetown Journal of International Affairs* 10, (2009): 183–189.

course toward deployment of Theater Missile Defenses (TMD) against shorter-range regional missile threats and a National Missile Defense (NMD) of the U.S. homeland against long-range strategic ballistic missiles.[2] The BMD also included a Cruise Missile Defense initiative for the first time. Moreover, it addressed, though it did not completely resolve, the problem of the 1972 ABM Treaty, which limited the defense of the homeland against strategic ballistic missiles (but did not limit theater defenses).[3]

National Missile Defense Act

Signed in July of 1999, the National Missile Defense Act of 1999 became law. This law stated, "It is the policy of the United States to deploy as soon as is technologically possible an effective National Missile Defense system capable of defending the territory of the United States against limited ballistic missile attack (whether accidental, unauthorized, or deliberate) with funding subject to the annual authorization of appropriations and the annual appropriation of funds for National Missile Defense."[4]

Comprehensive Test Ban Treaty

In 1996 President Clinton signed the U.S. into the Comprehensive Test Ban Treaty (CTBT), a revolutionary international agreement that prohibited all signatory nations from testing nuclear weapons. The next year, President Clinton sent the treaty to the Senate for ratification, and the Senate rejected it in October of 1999. International reaction to the

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[2] "The Missile Defense Act Of 1995," The Heritage Foundation, 17 March 2018, https://www.heritage.org/defense/report/the-missile-defense-act-1995-the-senates.
[3] "The Missile Defense Act Of 1995," The Heritage Foundation, 17 March 2018, https://www.heritage.org/defense/report/the-missile-defense-act-1995-the-senates.
[4] "NSPD-23: National Policy on Ballistic Missile Defense," The Heritage Foundation, 17 March 2018, https://www.heritage.org/defense/ report/the-missile-defense-act-1995-the-senates./offdocs/nspd/nspd-23-fs.htm.

Senate's action was consistently negative, and the rejection was a political setback for President Clinton, who lobbied actively for its approval. 166 countries signed and ratified the CTBT with 17 countries signing but not ratifying, which included the U.S. Despite the rejection of the treaty, President Clinton promised that the U.S. would continue to preserve its policy of not testing nuclear weapons that had been in place since 1992.[5]

President Clinton also announced at this time the U.S. intent, "as part of our national security strategy" was to "retain strategic nuclear forces…" and in this regard considered "the maintenance of a safe and reliable nuclear stockpile to be a supreme national interest of the U.S." President Clinton also set forth conditions for U.S. agreement to the CTBT part that included, "the conduct of a Science-Based Stockpile Stewardship program to ensure a high level of confidence in the safety and reliability of nuclear weapons in the active stockpile…" and "the maintenance of modern nuclear laboratory facilities and programs… which will attract, retain, and ensure" a continuous supply of nuclear weapons scientists. President Clinton also directed that the capability to resume underground nuclear testing be maintained. President Clinton's strong endorsement of the nuclear weapons labs' "Science-Based Stockpile Stewardship" program as a means of preserving the U.S. "nuclear deterrent" without nuclear testing was coupled with a plea to Congress for bipartisan support for the program "over the next decade and beyond."

PDD-37

To ensure worldwide backing for an unlimited extension of the Nuclear NPT at the NPT Review and Extension meeting in the U.S. in April of 1995, the White House assured further nuclear compliance with

[5] David Krieger, *The Challenge of Abolishing Nuclear Weapons,* (New Brunswick, NJ: Transaction Publishers, 2009), 125.

the NPT's Article VI beyond those achieved by START I and II. Coinciding with the NPT conference, President Clinton in the late spring of 1995 signed into effect Presidential Decision Directive 37 (PDD-37) to guide the agencies on arms control after START II.[6] PDD-37 contained a list of four "first principles" that would guide the U.S. method to arms control, which included:

- Deterrence (Retain U.S. warheads at a level consistent with war-fighting needs)
- Stability (Minimize the impact of those Russian systems, [deleted], that pose the greatest threat to U.S. interests)
- Equivalence (Reduce and eliminate U.S. and Russian non-deployed warheads and fissile materials)
- Hedge (Protect the U.S. Strategic nuclear delivery vehicle force structure)

PDD-60

President Clinton in November of 1997 signed PDD-60, which dealt with nuclear weapons employment policy guidance. PPD-60 was the first revision of guidance in more than 15 years. PPD-60 took account of the changes in policy and force posture brought on at the end of the Cold War and built on the conclusions of previous policy reviews, such as the NPR and QDR.[7]

PDD-60 described the purposes of U.S. nuclear weapons and provided broad presidential guidance for developing operational plans. It also provided procedures for preserving nuclear deterrence and U.S. nuclear forces. PDD-60 indicated that the U.S. must maintain the

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[6] The Nautilus Institute, "The Nautilus Institute Nuclear Strategy Project: STRATCOM's View", The Nautilus Institute, August 07, 2001, https://nautilus.org/uncategorized/the-nautilus-institute-nuclear-strategy-project-stratcoms-view.

[7] "PDD/NSC 60: Nuclear Weapons Employment Policy Guidance, November 1997," Federation of American Scientists, accessed 18 March 2018, http://www.fas.org/irp/offdocs/pdd60.htm.

assured response capability to inflict "unacceptable damage" against the assets the enemy values most. The document also stated that the U.S. must continue to plan a range of options to ensure the ability to respond to aggression in a manner appropriate to the provocation, rather than being left with an "all or nothing" response. PDD-60 continued the policy that the U.S. would not rely on "launch on warning," but would maintain the capability to respond promptly to any attack, thereby complicating an adversary's calculations and replacing previous Cold War rhetoric to "winning a protracted nuclear war."[8]

PDD-60 reaffirmed that the U.S. should have a triad of strategic deterrent forces to complicate an adversary's attack and defense planning. It also noted that deterrent forces and their associated command and control structure should be flexible and survivable, to ensure that the U.S. would be able to make an adequate and appropriate response.

Nuclear Posture Review 1994

President Clinton directed the Secretary of Defense to complete a full review of the entire nuclear enterprise, starting in 1993, to address the substantial changes in the security environment that the U.S. and military faced. NPR 1995 was the first full review of nuclear policy in the post-Cold War world that included policy, doctrine, force structure, command and control, operations, supporting infrastructure, safety, security, and arms control.[9] The decisions codified by the NPR development allowed DOD to put its nuclear programs (headed by the Department of Energy (DOE)) on solid footing. After many years of significant variation in the global environment, the DOD's forces and

[8] "PDD/NSC 60: Nuclear Weapons Employment Policy Guidance, November 1997," Federation of American Scientists, accessed 18 March 2018, http://www.fas.org/irp/offdocs/pdd60.htm.
[9] 1994 Nuclear Posture Review Report, 12.

programs had to meet a new threshold, one driven by further reductions called for by the START I and START II agreements.[10]

The following five major themes of U.S. nuclear strategy came from the NPR:

- The role of U.S. nuclear weapons is reduced, lower than at any other time in the nuclear age.
- The U.S. requires a much smaller nuclear arsenal under the current circumstances and international environment.
- The security environment has changed drastically since the end of the Cold War, therefore great uncertainty about the future, especially in the FSU, where the process of denuclearization and reduction is taking place but not complete.
- The U.S. does not have a true U.S.-only national deterrent posture; the deterrent posture includes the deterrent protection of its nuclear arsenal to its allies.
- The U.S. will continue to set the highest international standards of stewardship for nuclear safety and security, command and control, use control, and civilian control.[11]

Nuclear Weapon Roles

The 1994 U.S. National Security Strategy states: "We will retain strategic nuclear forces sufficient to deter any future hostile foreign leadership with access to strategic nuclear forces from acting against our vital interests and to convince it that seeking a nuclear advantage would be futile. Therefore we will continue to maintain nuclear forces of sufficient size and capability to hold at risk a broad range of assets valued by such political and military leaders."[12] During the early 1990s, international upheavals did not change the idea that nuclear weapons would remain an essential part of U.S. military power. Concepts of

[10] 1994 Nuclear Posture Review Report, 32.
[11] 1994 Nuclear Posture Review Report, 33.
[12] William J. Clinton, The National Security Strategy of the United States of America (Washington, DC: The White House, 1994).

deterrence and survivability were continuing to be central to U.S. nuclear posture. The U.S. continued to threaten retaliation, including nuclear retaliation, and to deter aggression against the United States, U.S. forces, and U.S. allies.

Leading and Hedging

The NPR considered that the proliferation of nuclear weapons and other weapons of mass destruction pose the highest security risk. A goal for the NPR was to demonstrate U.S. leadership could counter that risk. Large reductions in U.S. nuclear weapons were underway, confirming the U.S. promise to a smaller global role for nuclear weapons. By 1988, the U.S. had reduced its nuclear arsenal by almost 60 percent. The U.S. had no new nuclear weapons programs and observed a unilateral moratorium on nuclear explosions in accordance with the CTBT, extending its testing moratorium into the future. These thoughtful changes helped set an example of decreasing dependence on nuclear weapons for military purposes.

The 1995 NPR sought out hedging, defined as a national strategy lying between nuclear pursuit and rollback, in which the approved nuclear force structure could support weapons levels more than those called for under START II, should major international changes demand it. The lead and hedge theme replicated the partnership between the U.S. and Russia, in which the U.S. sought to cooperate with Russia wherever such cooperation was probable and to prepare realistically for possible tensions or disruptions of that relationship.[13]

Nuclear Posture Reduction

Large reductions in strategic and non-strategic nuclear weapons under START I and START II showed clear evidence that the U.S. was reducing the role that nuclear weapons played in its military posture.

[13] 1994 Nuclear Posture Review Report, 34.

The NPR looked to change nuclear targeting and war planning with several reviews and adjustments to account for the decline of the Warsaw Pact and the USSR breakup, while continuing to maintain "flexible responses" to international affairs.

Strategic Nuclear Forces

The 1994 Nuclear Posture Review key force structure decisions incorporated START I force levels, the concept of "lead and hedge," and 2003 (post–START II) anticipated force levels. The publically available unclassified 1994 NPR briefing slides concluded with the themes of a reduced role for nuclear weapons in national security, counter-proliferation, reversibility (if Russian political reform failed), and nuclear stockpile stewardship.[14] The strategic force levels in the NPR decisions were to:

- maintain no more than 20 B-2 bombers in the nuclear role
- reduce the B-52 bomber force from 94 to 66
- reduce Trident submarine fleet numbers from 18 to 14
- modernize the SLBM force for an extended service life by arming all submarines with D-5 missiles
- maintain 500/450 single warhead Minuteman III ICBMs
- maintain flexibility for subsequent force level cuts or force reconstitution.[15]

The 1994 NPR force level recommendations—which maintained President Clinton's administration policy of "lead and hedge"—centered on a requirement of 3,500 weapons, assuming full implementation of the

[14] 1994 Nuclear Posture Review Report, 35.
[15] 1994 Nuclear Posture Review Report, 36.

START II treaty.[16] Secretary Perry in 1995 addressed force levels and threats. Perry explained that the 1994 NPR examined various force structures, from ones that increased systems to a minimal force without ICBMs and ten SSBNs, and that the recommended 1994 NPR force structure that included "hedge" forces and was accepted by President Clinton was based on Russian ratification and successful execution of START II.[17]

In 1996, the U.S. policy for reaching force levels under START I and II appeared to change. Identifying the fact that the Russian government had still not ratified START II and foreseeing that the strategic role of nuclear weapons had weakened, Secretary Perry's 1996 Annual Report explained that the U.S. would "hedge"—at an "affordable cost"—by keeping options to maintain forces under START I levels until Russian ratification of START II and the initiation of treaty-mandated reductions.[18]

Secretary Perry explained in 1994 the motivation behind "leading and hedging." The U.S. was in the driver's seat to lead arms reductions to reduce defense expenditures and promote disarmament, as required by the Treaty on the Nonproliferation of Nuclear Weapons Article VI, but the U.S. would also hedge against political reversals in Russia—defined as a return of an authoritarian government with 25,000 nuclear weapons—and the policy goal of pursuing both objectives was reflected in the 1994 NPR.[19] Secretary Perry concluded that the 1994 NPR had effectively negotiated an equilibrium between lead and hedge, rebalanced the nuclear triad, adjusted Non-Strategic Nuclear Force (NSNF) levels,

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[16] S. Hrg. 103–870: Briefing on Results of the Nuclear Posture Review, Senate Armed Services Committee, 103rd Cong., 2nd sess., 1994. Also see Perry, 1995 Annual Report, 83–92.
[17] William J. Perry, Annual Report to the President and the Congress (Washington, DC: Government Printing Office, 1995), 87.
[18] William J. Perry, Annual Report to the President and the Congress (Washington, DC: Office of the Secretary of Defense, 1996), 15.
[19] 1994 Nuclear Posture Review Report, 50.

and recommended force reductions in line with the goal of a reduced role for nuclear weapons in 1995.[20] The 1994 NPR had attained the smaller, safer, and more controlled nuclear arsenal envisaged by Secretary Perry. The 1994 NPR studied multiple force structures and converged on one that could attain the START II force while also serving the goals of "lead and hedge."

The 1994 NPR key force structure decisions revolved around force level reductions. Moving to a reduced role for nuclear weapons, Secretary Perry defined the 1994 NPR, suggesting force levels as a stabilizing force structure following the dramatic changes in forces and programs since the end of the Cold War.[21] The 1994 NPR identified different force structure paths, considered significant reductions, declared that the primary concern remained the capabilities of the FSU (including the possibilities of a hostile Russian government or an arms control process failure), and studied options for quicker reductions.[22] The official view in 1995 regarding the 1994 NPR recommendations was that force numbers (which were still expected to be adjusted) reflected reduced platforms, not warheads—specifically, the NPR "did not change the total number of warheads the United States planned to retain under START II"—and "no new strategic nuclear systems are either under development or planned."[23] Force level reductions were linked to the reduced role of nuclear weapons in official statements.

Non-Strategic Nuclear Forces

The NPR upheld that the U.S. had both a national deterrent posture and also an international nuclear posture. The U.S. extendrf the deterrent protection of its nuclear arsenal to its allies around the world.

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[20] Perry, 1995 Annual Report, 92.
[21] 1994 Nuclear Posture Review Report, 40.
[22] 1994 Nuclear Posture Review Report, 10.
[23] 1994 Nuclear Posture Review Report, 25.

The most evident part is in the area of NSNF—for more than 50 years, the U.S. sustained an ample military presence in regions considered vital to American national interests.

Alliance commitments and the unique characteristics of nonstrategic nuclear forces were primary considerations in the NPR's consideration of what the NSNF force structure should be.[24] The NPR considered many options, ranging from robust to removal of NSNF entirely.

NSNF decisions had the effect of permanently removing the capability to arrange nuclear weapons on naval surface ships—a step that could encourage the Russians to reciprocate—while maintaining a nonstrategic nuclear force capable of satisfying U.S. commitments to allies.

Infrastructure

The DOD continued a streamlined and adjusted nuclear posture that required sustaining the infrastructure to support U.S. nuclear forces. The NPR focused its examination of the nuclear infrastructure on two key areas:

- the industrial base for strategic missiles, reentry systems, and guidance
- bomber aircraft

These areas are supported by the DOE, which is responsible for producing and maintaining nuclear weapons for DOD systems and the country.

Safety, Security, and Use Control

The NPR concerned itself with maintaining the U.S. lead role in nuclear safety and security issues. The safety, security, and use controls

[24] 1994 Nuclear Posture Review Report, 26.

of nuclear weapons were the solemn responsibility of those states that own them. The U.S. set the highest international standards for the safety, security, and responsible custodianship of its nuclear arsenal. The dramatic force reductions which had already taken place since the end of the Cold War—U.S. strategic warheads cut by 59 percent since 1988; and nonstrategic nuclear forces by 90 percent—have contributed significantly to the increased safety and security of U.S. nuclear weapons. As a result of these reductions, nuclear storage sites have been reduced by 75 percent.[25]

NPR Conclusion

In the 1994 NPR, the DOD created a sensible equilibrium between leading the way to a safer world and hedging against the unforeseen. In the post-Cold War environment, the U.S. continues to require a nuclear deterrent. The strategic triad has been streamlined and adjusted, as have nonstrategic nuclear forces, to account for the reduced role nuclear weapons play in U.S. national security. Major force reductions and cost savings were already underway, leading to a smaller, safer, and more secure U.S. nuclear force.[26]

National Military Strategy 1995 & 1997

The 1995 and 1997 National Military Strategies (NMS) focused on nuclear deterrence. Both documents spoke to changing international norms and the reduced threat that Russia posed, but still pushed for nuclear systems to be ready to deter. The first statement by the NMS in the nuclear deterrence section was, "The highest priority of our military strategy is to deter a nuclear attack against our Nation and allies. Our survival and the freedom of action that we need to protect extended national interests depend upon strategic and nonstrategic nuclear forces,

[25] 1994 Nuclear Posture Review Report, 35.
[26] 1994 Nuclear Posture Review Report, 36.

and their associated command, control, and communications."[27] Also, arms control was mentioned in addition to the NPR—and how its important to nuclear deterrence.

Media Influences

During the 1990s, the main nuclear issues were driven by environmental concerns. Nuclear waste was a major issue, demonstrated by the attention paid to the clean up of the Hanford Site in Washington and the Rocky Flats Plant in Colorado. The negative media coverage has proven to be long-lasting. Major infrastructure within the nuclear weapons complex was shut down for various reasons, decommissioned or even raided by the Environmental Protection Agency (EPA) and Federal Bureau of Investigation (FBI). Today, the fear of nuclear power continues to be present even if the American public is unaware of the stories and details surrounding nuclear energy.[28]

Hollywood produced multiple movies dealing with nuclear weapons *True Lies* (1994), *Crimson Tide* (1995), *Broken Arrow* (1996), *Independence Day* (1996), and *Armageddon* (1998). The media was still enamored by terrorism and what would happen if terrorist groups were able to procure a nuclear weapon. *True Lies* and *Broken Arrow* were filmed with the most popular male actors at the time—Arnold Schwarzenegger, John Travolta, and Christian Slater, all being affiliated with the U.S. government in some way in the movies. Both movies dealt with terrorists gaining control of nuclear weapons and using or trying to use them on American soil.

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[27] Joint Chiefs of Staff, National Military Strategy of the United States (Washington, DC: Government Printing Office, 1995), 10.
[28] Jon Palfreman, "A Tale of Two Fears: Exploring Media Depictions of Nuclear Power and Global Warming," *Review of Policy Research*, 23, 23 (27 February 2006): https://doi.org/10.1111/j.1541-1338.2006.00184.x.

Summary

President Clinton's time in office was consumed by growing economic and domestic agendas. The bottom-up approach started with a complete look at the conventional munitions review, moved to the NPR, and took hold and created a new approach to reviews for the U.S. government. The NPR along with the NMS produced a much different approach to nuclear weapons strategy and policy focusing on leading and hedging in the current world.

Helping the world to be safer and more secure via leadership techniques and arms control was a different thought process. This was possible because of the breakup of the USSR and the use of the Nunn-Lugar Cooperative Threat Reduction Program to help build relationships and secure weapons throughout the FSU.

Hedging was a different story, opening the aperture and appetite for maintaining the nuclear enterprise at the current level and keeping it current. Policy dictated that the U.S. maintain a capability to hedge against a resurging Russia or other threats from WMDs. The stopping of testing and all weapons programs associated with nuclear weapons would be a demanding challenge faced by the industrial complex and the military.

Chapter 9

President George W. Bush:

January 20, 2001 – January 20, 2009

New World Order: 2001–2009:

We favor a strong nonproliferation program that emphasizes diplomacy, reliance on multilateral regimes, controls on nuclear materials, and cooperative nuclear threat reduction.

– President George W. Bush

President George W. Bush became the 43rd president by a very close margin over presidential candidate Al Gore. The September 11 (9/11) terrorist attacks happened just eight months into Bush's first term. President Bush's responded with what became known as the Bush Doctrine: initiation of a "War on Terror," a global military campaign that included the war in Afghanistan (Operation Enduring Freedom) in 2001 and the Iraq War (Operation Iraqi Freedom) in 2003.

The Bush Administration, in dealing with the 9/11 attacks, began the global war on terrorism that focused on WMDs. Iraq, having claimed a WMD program, was quickly called out by the Bush administration. The Bush administration built its justification for the war mainly on the assertion that Iraq, which had been regarded by the U.S. as a rogue state since the Persian Gulf War, possessed WMDs and that the Iraqi government posed a direct threat to the U.S. and its coalition allies. The Global War on Terrorism (GWOT) consumed the U.S. military during the early 2000s, and it is still feeling the effects 17 years later.

National Security Strategy

The 2006 National Security Strategy (NSS) called for new methods for deterrence and defense development, stated that U.S. deterrence was no longer based fundamentally on "grim" threats of massive retaliation, and explained that deterrence by denial, of both state and non-state actors, could be achieved more successfully by using a mixture of

offensive and defensive capabilities.[1] The NSS looked at moving past MAD and conceptualized pursuing offensive and defensive capabilities to threaten an adversary with operational defeat instead of punishment.

Quadrennial Defense Review

The national security goals of assure, dissuade, deter, defend and defeat—expressed in the 2001 QDR—underpinned how the 2001 NPR assessed the role of nuclear weapons.

National Military Strategy

In the 2004 NMS, the U.S. required a broad set of options to discourage aggression and coercion. The NMS looked for nuclear capabilities to continue to play a vital role in deterrence by providing military options to deter a range of threats, including the use of weapons of mass destruction and large-scale conventional forces. Also, the extension of a credible nuclear deterrent to allies was important as a nonproliferation tool and helped remove incentives for allies to develop and deploy nuclear forces of their own.[2] The NMS deterred aggression from a wider range of adversaries by transforming existing U.S. strategic nuclear forces into a new triad composed of a diverse portfolio of capabilities. The New Triad for strategic deterrence included non-nuclear and nuclear strike forces, active and passive defenses, as well as infrastructure to build and maintain the force.[3] Improvements and enhancements to non-nuclear strike capabilities, information operations,

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[1] George W. Bush, The National Security Strategy of the United States of America (Washington, DC: The White House, 2006), 22. Deterrence by denial refers to denying an adversary the ability to achieve its political and military objectives through aggression. See Michael S. Gerson, "Conventional Deterrence in the Second Nuclear Age," Parameters 39 (Autumn 2009): 32–48.
[2] Joint Chiefs of Staff, National Military Strategy of the United States (Washington, DC: Government Printing Office, 2004), 12.
[3] 2004 National Military Strategy, 12.

command and control, intelligence, and space forces contributed to a more robust and effective deterrent capability for President Bush.

NPR

President Bush's direction for the 2001 NPR recognized that the new security environment demanded that the DOD go beyond the Congressional mandate in developing a strategic posture for the 21st century, which transformed America's military and prepared it for the new, unpredictable world in which we live.[4] The NPR built off of the QDR and put in motion a significant transformation in the method and role of nuclear offensive forces in a deterrent strategy and presented the blueprint for transforming the strategic posture for the U.S.

The 2001 NPR established a New Triad, composed of:

- Offensive strike systems (both nuclear and non-nuclear);
- Defenses (both active and passive); and
- A revitalized defense infrastructure that would provide new capabilities in a timely fashion to meet emerging threats.

The NPR used command and control with the intelligence system to bind the New Triad.[5]

Nuclear Weapon Roles

The 2001 NPR recognized the critical role and value of nuclear weapons along with a broader conception of national security goals. The 2001 NPR charted an extensive range of jobs for nuclear weapons. During the Cold War, nuclear weapons had a commanding role, but in 2001, the role of nuclear weapons in the NPR was undefined. Unclassified and leaked parts of the 2001 NPR defined the purpose of

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[4] 2001 Nuclear Posture Review [Excerpts], submitted to Congress December 31, 2001, dated January 8, 2002, 1, http://www.stanford.edu/class/polisci211z/2.6/NPR2001leaked.pdf.
[5] 2001 Nuclear Posture Review [Excerpts], 1.

nuclear weapons as providing "credible military options" to deter a wide range of possible threats, "including WMD and large-scale conventional military force," given the exclusive features of nuclear weapons in holding at risk opponent targets not vulnerable to non-nuclear means.[6]

National security goals were set, and nuclear weapons served to complete the goal. Keith Payne, the primary writer of the 2001 NPR for President Bush, explained that nuclear weapons serve goals beyond those suggested by their "military characteristics." Also, that deterrence, assurance, and dissuasion more clearly indicated the other U.S. goals of protecting allies, restricting the proliferation of WMD, and discouraging potential adversaries from challenging U.S. power and interests. The enduring use of nuclear weapons as a "withheld threat" highlighted the central role of nuclear weapons in national security.[7] The national security goal of assurance was crucial to protecting U.S. global alliance agendas and reinforced a continuing role of providing a nuclear umbrella.[8] The 2001 NPR viewed nuclear weapons as a steadfast deterrent for the post–Cold War security environment and also for providing flexible options for U.S. leadership. The security context was very different from that during the Cold War; the 2001 NPR emphasized that a combination of capabilities would provide flexible options to deter potential adversaries motivated by different values and risk perceptions.[9] The national security goals of assure, dissuade, deter, defend and defeat—stated in the 2001 QDR—supported how the 2001 NPR assessed the role of nuclear weapons.

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[6] Nuclear Posture Review [Excerpts], 3.
[7] H.A.S.C. No. 110–73: U.S. Nuclear Weapons Policy, Hearing before the Strategic Forces Subcommittee of the Committee on Armed Services, House of Representatives, 110th Cong., 1st sess., 2008, 1.
[8] H.A.S.C. No. 110–73: U.S. Nuclear Weapons Policy, 71.
[9] 2001 Nuclear Posture Review [Excerpts], 3.

Strategic Nuclear Forces

The 2001 NPR asserted that the following force levels and force structure should be achieved by 2012:

- an operationally deployed force of 1,700–2,200 strategic nuclear warheads
- 14 Trident SSBNs
- 500 Minuteman III ICBMs
- 76 B-52H heavy bombers
- 21 B-2 bombers[10]

The 2001 NPR goal of an operationally deployed force including, 1,700–2,200 warheads, by 2012 was key to assessments of instant and unanticipated contingencies.[11] This was nearly the same as the hedge force of the 1994 NPR.

The force structure choices for the 2001 NPR lowered operationally deployed strategic nuclear warheads and implemented the New Triad while preserving defense planning flexibility. The 2001 NPR projected an operationally deployed force of 3,800 warheads by the end of the fiscal year 2007—a 40 percent reduction—but observed that force structure would mostly be retained. The NPR stated, "The drawdown of the operationally deployed strategic nuclear warheads will preserve force structure in that, aside from the Peacekeeper ICBM and the four Trident SSBNs, no additional strategic delivery platforms are scheduled to be eliminated from strategic service."[12]

President Bush's administration used the 2001 NPR to conceive wide, all-inclusive defense changes, of which the New Triad was perhaps the most substantial. The DOD applied the capabilities-based approach

[10] 2001 Nuclear Posture Review [Excerpts], 10.
[11] 2001 Nuclear Posture Review [Excerpts], 6.
[12] 2001 Nuclear Posture Review [Excerpts], 16.

to nuclear forces as a diverse array of options for countering a broad array of "possible contingencies."[13] DOD Secretary Donald Rumsfeld's 2002 Annual Report defined the 2001 NPR as a "blueprint for transforming our strategic posture" and stated that it characterized "a major departure in our approach for managing strategic issues."[14] Change of the U.S. nuclear posture was intended to balance transformation of conventional forces for a novel understanding of the security environment. An acknowledgment that Cold War deterrence models and prospects would not apply to all possible post–Cold War adversaries or threat circumstances. Even though the NPR directed changes, in 2006 inconsistent improvements were reported on completing all aspects of the New Triad as directed by the 2001 NPR: "The only robust capability in the New Triad is the Old Triad—the legacy nuclear forces of land-based ICBMs, sea-based SLBMs, and strategic bombers."[15] The 2001 NPR's New Triad was incredibly ambitious in its goal of transformation but not genuinely successful in implementation.

New Nuclear Triad

The New Nuclear Triad expanded the triad beyond the classic assortment of manned bombers, ICBMs, and SLBMs. The New Triad includes the following capabilities:

- Offensive strike systems (both nuclear and non-nuclear);
- Defenses (both active and passive); and

[13] Donald H. Rumsfeld, Annual Report to the President and the Congress (Washington, DC: Office of the Secretary of Defense, 2002), 85.
[14] Donald H. Rumsfeld, Annual Report to the President and the Congress (Washington, DC: Office of the Secretary of Defense, 2002), 83–84. Ch. 7, "Adapting U.S. Strategic Forces," discussed the New Triad.
[15] Defense Science Board, Report of the Defense Science Board Task Force on Nuclear Capabilities Report Summary (Washington, DC: Office of the Under Secretary of Defense for Acquisition, Technology, and Logistics, 2006), 14.

- A revitalized defense infrastructure that will provide new capabilities in a timely fashion to meet emerging threats.[16]

This New Triad demonstrated that the U.S. security and defense establishment has moved beyond the rather crude, classical deterrent triad of the Cold War. The New Triad sought to add conventional and nuclear defensive capability, targeting the offensive nuclear capability of peer competitors or rogue nuclear states.

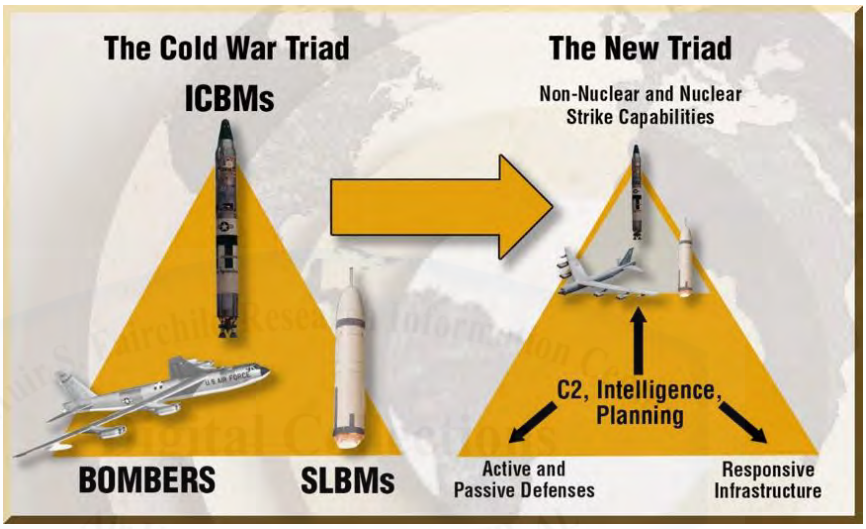

Figure 1: New Triad depiction
Source: Paul Crank, "New Triad," Department of Defense, 2001, www.defense.gov/Photos/Photo- Gallery/igphoto/2001708929/.

NPR Conclusion

The 2001 NPR set in motion extensive changes intended to align U.S. strategic policy with the different truths and threats of the post–Cold War security environment. President Bush highlighted that the new strategic environment, including the rise of hostile states with WMD and

[16] Col Patrick J. Owens, Biodefense and Deterrence: A Critical Element in The New Triad (Maxwell AFB, AL: Air University Press, 2009), http://www.au.af.mil/au/awc/awcgate/cst/bh2009_owens.pdf (accessed March 22, 2018).

the improvement in U.S.-Russian relations, demanded changes in strategic policy.

Strategic Offense Reduction Treaty

Strategic Offense Reduction Treaty (SORT) was one in a long line of treaties and negotiations on mutual nuclear disarmament between Russia (formerly the USSR) and the U.S. SORT was also known as the Moscow Treaty and was different from START in that it limited operationally deployed warheads, whereas START I limited warheads through declared attribution to their means of delivery (ICBMs, SLBMs, and Heavy Bombers). Signed in May of 2002 in Moscow, both the U.S. and Russia agreed to limit their nuclear arsenal to between 1,700 and 2,200 operationally deployed warheads each. In June of 2003, after ratification by the U.S. Senate and the State Duma, SORT came into force. The New START superseded before SORT expired on 31 December 2012.

Media Influence

Just as seen in nuclear policy over the decades, media influence has changed significantly over the years. As access to the World Wide Web has grown, the dominance of traditional media outlets has begun to fade. During this time period, social media grew exponentially with the advent of easily accessible globally shared access points such as Facebook and Twitter. These new avenues take away from the more centralized sources of news as seen in prior years. This is not to say that there is a lack of awareness of nuclear policy or an American public that is lacking an opinion on nuclear warfare or nuclear power capabilities. Rather it is to point out that public opinion of these subjects is no longer easily discernible due to the extensive options available to the greater population.

At the beginning of the Bush administration, little attention was paid to nuclear issues. All of this changed on September 11, 2001 (9/11) when the terrorist attack happened in America. Thoughts of armageddon played in the background and terrorists were lurking behind every corner with weapons of mass destruction (WMDs).

The media played a significant role in the public's view of Operation Iraqi Freedom, where President Bush authorized the mission to rid Iraq of tyrannical dictator Saddam Hussein and eliminate Hussein's ability to develop WMDs. The WMDs in this operation had a significant amount of coverage, due mostly to the fact that, after years of searching for them, they were never to be found.

Summary

President Bush's administration built a wide variety of nuclear options and capabilities and took a lot of time, money, and effort to builed a fundamentally new concept of deterrence and the triad. The 2001 NPR, the NSS, QDR, and NMS all pushed forth a united front of nuclear policy and strategy. Building the New Triad, although not completed as soon and as easily as thought, brought a different approach to how deterrence was used.

The Bush administration was quickly handcuffed by current affairs, especially the 9/11 attacks. These handcuffs stunted work on a major part of the nuclear enterprise, but the NPR along with the signing of SORT helped to show that the administration was thinking of nuclear enterprise problems.

Chapter 10

President Barack H. Obama:

January 20, 2009 – January 20, 2017

Resurging of Nuclear World: 2009–2017:

> *Peace is not just the absence of war. True peace depends upon creating the opportunity that makes life worth living. And to do that, we must confront the common enemies of human beings: nuclear weapons and poverty; ignorance and disease.*
>
> – President Barak H. Obama

President Barack H. Obama came into the presidency with a rhetorical bang on nuclear policy and strategy. During a 2009 speech in Prague at the beginning of his time in office, President Obama said, "First, the United States will take concrete steps towards a world without nuclear weapons. To put an end to Cold War thinking, we will reduce the role of nuclear weapons in our national security strategy, and urge others to do the same. Make no mistake: As long as these weapons exist, the United States will maintain a safe, secure and effective arsenal to deter any adversary, and guarantee that defense to our allies. But we will begin the work of reducing our arsenal."[1] This speech set the framework in place to build the next NPR and arms-limitation meeting for the administration.

In addition to his stance on nuclear weapons, President Obama was dealing with two wars in the Middle East, each of which challenged the global status quo of power and the resurgence of Russia, along with a rebalance to the Pacific to counter China's rise as a regional, and possibly, a global power.

[1] Remarks by President Barack Obama In Prague As Delivered April 5, 2009

National Security Strategy

President Obama's 2010 NSS makes the same determination as President Bush's NSS: "there is no greater threat to the American people than weapons of mass destruction, particularly the danger posed by the pursuit of nuclear weapons by violent extremists and their proliferation to additional states."[2] Nuclear proliferation is a key to the 2010 NSS. Multiple sections talk about nuclear non-proliferation and how to secure and keep nuclear technologies out of the hands of enemy countries that are pursuing these weapons such as Iran and North Korea. The NSS states, "Our military must maintain its conventional superiority and, as long as nuclear weapons exist, our nuclear deterrent capability, while continuing's to enhance its capacity to defeat asymmetric threats, preserve access to the global commons, and strengthen partners."[3]

Quadrennial Defense Review

The 2014 QDR states, "the fundamental role of U.S. nuclear forces is to deter nuclear attack on the United States, as well as on our allies and partners."[4] President Obama's Administration continued to reduce the role of nuclear weapons for the U.S. in deterring a non-nuclear attack, but these forces continued to play a limited but critical role in the nation's strategy to address threats posed by states that possess nuclear weapons and states that are not in compliance with their nuclear nonproliferation obligations.[5] The role of nuclear weapons in the QDR is to deter a strategic attack on the homeland by potential adversaries and provide the means for effective responses should deterrence fail. Our

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[2] Barack Obama, National Security Strategy (Washington, DC: The White House, 2010), 23.
[3] Barack Obama, National Security Strategy (Washington, DC: The White House, 2010), 14.
[4] U.S. Department of Defense, *Quadrennial Defense Review (QDR*) Report (Washington, DC: Department of Defense, 2014), 14.
[5] U.S. Department of Defense, *Quadrennial Defense Review (QDR)* Report, 14.

nuclear forces contribute to deterring aggression against the U.S. and allied interests in multiple regions, assuring U.S. allies that our extended deterrence guarantees are credible, and demonstrating that we can defeat or counter aggression if deterrence fails. U.S. nuclear forces also help convince potential adversaries that they cannot successfully escalate their way out of failed conventional aggression against the United States or our allies and partners.[6] The QDR states that the U.S. will continue to maintain safe, secure, and effective nuclear forces while reducing our strategic nuclear forces in accordance with the New START Treaty.

New START

The United States and Russia signed a new Strategic Arms Reduction Treaty known as New START in April 2010. The New START treaty replaced the 1991 Strategic Arms Reductions Treaty (START), which was due to expire 15 years after implementation in December 2009. Both the U.S. Senate and the Russian parliament ratified the treaty in late 2010 and early 2011. The treaty entered into force in February of 2011. New START supersedes the 2002 Strategic Offensive Reductions Treaty (known as the Moscow Treaty), which had lapsed. New START provided the parties with seven years to reduce their forces, and it will remain in force for a total of ten years.

National Military Strategy

The 2015 NMS states the U.S. will, "Maintain a Secure and Effective Nuclear Deterrent. U.S. strategic forces are kept at the highest state of readiness, always prepared to respond to threats to the homeland and our vital interests. Accordingly, we are investing to sustain and modernize our nuclear enterprise. We continue to implement the 2010 Nuclear Posture Review and 2011 New START Treaty while

[6] U.S. Department of Defense, Quadrennial Defense Review (QDR) Report, 14.

ensuring our national defense needs are met. Concurrently, we are enhancing our command and control capabilities for strategic and regional nuclear forces."[7]

NPR

President Obama's 2010 NPR featured a new, less ambiguous negative security assurance (NSA). President Obama's White House Coordinator for Arms Control and Weapons of Mass Destruction, Proliferation, and Terrorism Gary Samore clarified that the 2010 NPR was meant to support President Obama's "commitment to disarmament and nonproliferation," to highlight that extended deterrence was still imperative, and to exclude countries such as North Korea and Iran that threaten U.S. allies and partners from the new, carefully formulated NSA.[8] The Obama administration officials stressed that the revised NSA assured allies of American support for nonproliferation goals.

The 2010 NPR was joined by the conclusion of the New START Treaty that limited—according to its counting rules—U.S. and Russian nuclear forces to levels much lower than those provided for in the 1991 START Treaty and the 2002 Moscow Treaty. Along with the last two NPRs, the 2010 NPR said that it would reduce the role of nuclear weapons in the U.S. national security strategy, and maintain deterrence and strategic stability at lower force levels.[9] One of the key decisions of the 2010 NPR was a major modification to the prioritization of ends (elevating the struggle against terrorism above more traditional

[7] Joint Chiefs of Staff, National Military Strategy of the United States (Washington, DC: Government Printing Office, 2010).
[8] Gary Samore, remarks at "International Perspectives on the Nuclear Posture Review," Carnegie Endowment for International Peace, Washington, DC, April 22, 2010.
[9] U.S. Department of Defense, Nuclear Posture Review Report (Washington, DC: Office of the Secretary of Defense, 2010), 3.

deterrence goals) and reaffirmed the goals of reducing the roles of nuclear weapons and pursuing nuclear arms control and disarmament.[10]

Nuclear Weapon Roles

President Obama's 2010 NPR transformed the importance of threats and associated nuclear deterrent capabilities to other policies such as threat reduction, extended deterrence, and nonproliferation. The 2010 NPR report stated, "The threat of global nuclear war Strategic Nuclear Forces has become remote, but the risk of nuclear attack has increased."[11] The Assistant Secretary of Defense for Nuclear, Chemical, and Biological Defense Programs Andrew Weber, in front of the Senate Armed Services Committee, in a hearing on nuclear forces and policies, stated that despite the changed nature of post–Cold War nuclear threats and the need to manage the nuclear terrorist threat, the U.S. needed to continue fielding strategic deterrent capabilities and maintain an "agile and responsive" nuclear weapons infrastructure, as well as continue threat reduction and nonproliferation activities.[12]

Also in April of 2013, at the same Senate Armed Services Committee hearing, Major General Garrett Harencak, Assistant Chief of Staff, Strategic Deterrence and Nuclear Integration, testified that present-day deterrence was not one-size-fits-all. General Harencak argued that to effectively deter near-peer and other nuclear-armed states would require "new thinking and tailored application," and that the "non-peer case may be the most challenging, and will require a renewed understanding of what motivates these actors as well as critical thinking

[10] 2010 Nuclear Posture Review Report, 3.
[11] 2010 Nuclear Posture Review Report, 3.
[12] Hearing to Receive Testimony on Nuclear Forces and Policies in Review of the Defense Authorization Request for Fiscal Year 2014 and the Future Years Defense Program, Hearing Before the United States Senate Committee on Armed Services, Subcommittee on Strategic Forces, 113th Cong., 1st sess., 2013, 23.

on how best to address the threats they pose."[13] The 2010 NPR report detailed that nuclear terrorism was the "most immediate and extreme threat" and that nuclear proliferation was "pressing" and demanded immediate action, given the prospect of certain states acquiring nuclear weapons, states which oppose the United States, its allies and partners, and the "broader international community."[14] President Obama's announcement on the release of the 2010 NPR report signaled that stopping nuclear proliferation and nuclear terrorism had moved to "the top" of the U.S. nuclear gameplan. This decision proved the importance of the NPT to U.S. interests.[15] President Obama and the 2010 NPR focused on the amplified risk of nuclear attack but in the context of terrorism, not large-scale, inter-state conflict. The threat of a traditional inter-state nuclear attack did not figure prominently in the 2010 NPR.

The key decisions of the 2010 NPR confirmed the basic purpose of nuclear weapons in national security and asserted a smaller role. The report reaffirmed U.S. reliance on nuclear weapons. Deployed weapons, strategic delivery vehicles, stockpiled weapons, command and control capabilities, and infrastructure were deemed "essential" to deterrence and contributed to the assurance of allies and partners and to promoting stability.[16] The NPR report quantified a reduced role for deterring nonnuclear attacks and referred to growing reliance on nonnuclear deterrence. The Secretary of Defense's 2012 report entitled "Sustaining U.S. Global Leadership: Priorities for 21st Century Defense" explained the ability to inflict "unacceptable damage" against an adversary in such a way as deterrence objectives could be met with smaller forces, however, the U.S. would consider reducing its reliance on nuclear weapons in

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[13] Hearing to Receive Testimony on Nuclear Forces and Policies in Review of the Defense Authorization Request for Fiscal Year 2014, 36.
[14] 2010 Nuclear Posture Review Report, 3.
[15] Office of the White House Press Secretary, "Statement by President Barack Obama on the Release of Nuclear Posture Review," April 6, 2010, 1.
[16] 2010 Nuclear Posture Review Report, 6.

national security.[17] President Obama specified five objectives of the 2010 NPR, which were outlined in the report:

- prevent nuclear terrorism and nuclear proliferation
- reduce the role of U.S. nuclear weapons in U.S. national security
- maintain strategic deterrence and stability at reduced nuclear force levels
- strengthen regional deterrence and reassure U.S. allies
- sustain a safe, secure, and effective nuclear arsenal.[18]

The NPR report looked to a reduced—or "more circumscribed"—role for nuclear weapons. With a changed geopolitical environment since the end of the Cold War and progress on U.S.–Russian nuclear arms control, as evidenced by a 75 percent drop in the number of deployed strategic weapons, and a substantial reduction in the number of stockpiled warheads, the NPR took to reducing the role of the nuclear weapon.[19] The NPR report acknowledged an ongoing vital deterrence role for nuclear weapons against potential adversaries and a role in assuring allies and partners, but also stated that the existing Cold War force structure was old-fashioned and "poorly suited" for countering current threats like terrorism and "unfriendly regimes" pursuing nuclear weapons.[20] The 2010 NPR echoed the fundamental purpose of nuclear weapons but reduced U.S. reliance on these weapons, as the cuts suggested.

The 2010 NPR made key decisions regarding the role of nuclear weapons NSAs and "sole purpose." The report indicated that the U.S. was

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[17] U.S. Department of Defense, Sustaining U.S. Global Leadership: Priorities for 21st Century Defense (Washington, DC: Secretary of Defense, 2012), 5.
[18] 2010 Nuclear Posture Review Report, iii.
[19] 2010 Nuclear Posture Review Report, 45.
[20] 2010 Nuclear Posture Review Report, v.

prepared to strengthen its long-established NSA policy with an imperative statement: "The United States will not use or threaten to use nuclear weapons against non-nuclear weapons states that are party to the Nuclear Non-Proliferation Treaty (NPT) and in compliance with their nuclear nonproliferation obligations."[21] Nevertheless, in the conversation of states not covered by the newly worded NSA, the U.S. government was not ready to accept a "sole purpose" policy for nuclear weapons. While the 2010 NPR NSA was categorized as firming standing policy, for states not subject to the NSA, including other nuclear-armed states, the U.S. government might consider the use of nuclear weapons in "a narrow range" of circumstances.[22] Delivering the revised NSA purpose was explicitly linked to assessments of increased conventional weapons capabilities, upgraded defenses (including missile defenses), and a corresponding decrease in the counter-WMD role for nuclear weapons.[23]

Ellen Tauscher, in 2011 the Under Secretary of State for Arms Control and International Security, clarified the NPR policy direction in congressional testimony that the report strengthened "longstanding" policy, and clarified that the U.S. government assessed its own "compliance judgments."[24] The 2010 NPR's NSA and subsequent official clarifications were meant to make it clear that states such as Iran and North Korea did not fall under the reviewed NSA.[25] The reinforced 2010 NSA was more precisely a simplified NSA meant to reduce ambiguity.

Strategic Forces

Significant decisions concerning force structure for the NPR were force levels, extended deterrence, potential reductions below New START

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[21] 2010 Nuclear Posture Review Report, 15.
[22] 2010 Nuclear Posture Review Report, 15, vii.
[23] 2010 Nuclear Posture Review Report, 15, 16.
[24] S. Hrg. 111–824: Nuclear Posture Review, Hearing Before the Committee on Armed Services, 111th Cong., 2nd sess., 2011, 61.
[25] S. Hrg. 111–824: Nuclear Posture Review, 37.

levels, and Russia. President Obama directed the assessment of possibilities for force level decreases below those connected with New START. The review determined that the condition for "strict numerical parity" between the U.S. and Russia was less pressing due to several geopolitical changes, namely a mellowing of U.S.–Russian competition and advanced U.S. conventional military capabilities. This gave the U.S. flexibility to adjust its nuclear force structure to address challenges while maintaining "traditional" deterrence and assurance goals.[26] According to the 2010 NPR, "Detailed NPR analysis of potential reductions in strategic weapons, conducted in spring 2009, concluded that the United States could sustain stable deterrence with significantly fewer deployed strategic nuclear warheads, assuming parallel Russian reductions."[27]

The NPR report arranged the associated analysis about the role of the nuclear triad in the force structure. The report exposed four fundamental requirements for the nuclear triad:

- retain second-strike capability
- retain sufficient strength in each triad leg to allow for maintenance of strategic deterrence given the failure of one leg due to "technological problems or operational vulnerabilities"
- retain excess numbers to allow for non-nuclear global strike capabilities (e.g., conventionally armed ICBMs or SLBMs)
- retain "needed" resources and capabilities in the nuclear complex over the long-term (i.e., at least several decades).[28]

NPR Conclusion

The official claims made by President Obama's Administration for the 2010 NPR were abundant:

- reducing the role of nuclear weapons

[26] 2010 Nuclear Posture Review Report, 29.
[27] 2010 Nuclear Posture Review Report, 20.
[28] 2010 Nuclear Posture Review Report, 20.

- extending a less ambiguous negative security assurance
- modernizing the nuclear weapons complex to maintain a safe, secure, and effective nuclear deterrent
- pursuing the goal of a nuclear weapons-free world
- laying the groundwork for a historic arms control agreement (New START) with Russia—including dramatic force reductions and a "comprehensive" monitoring framework.[29]

The 2010 NPR elevates the goals of nonproliferation, counterterrorism, and disarmament to higher prominence compared with past NPRs, which focused mainly on how best to carry on nuclear deterrence against an assortment of possible threats. This NPR talks about deterrence of attacks on the U.S. and its allies and how these continue to be a vital strategic goal, but this new NPR seeks to lessen dependence on nuclear weapons. The 2010 NPR presents a substantial change in the language and criteria for applying negative security assurances to non-nuclear weapon states. The NPR is very well written, giving policy positions and qualifying them in clear and persuasive style. The NPR also contains haunting uncertainties, including the policy toward biological and chemical weapons (the so-called calculated ambiguity policy), the stance on the preemptive and preventive use of nuclear weapons, and the role of allies in conventional deterrence.[30]

Media Influence

Media influence during the Obama administrations took a drastic turn towards a focus on global warming—the dangers associated with climate change. Although not a direct connection to the nuclear

[29] Barack Obama, National Security Strategy (Washington, DC: The White House, 2010), 23.
[30] Scott D. Sagan and Jane Vaynman, "Reviewing the Nuclear Posture Review," *The Nonproliferation Review* 18:1, 17-37, (2011): https://www.tandfonline.com/doi/citedby/10.1080/10736700.2011.549169?scroll=top&needAccess=true

enterprise, President Obama's speech on disarmament in Prague in 2009 was extremely well received and documented in the media. Obama was praised for the call to eliminate nuclear weapons and pressing for a nuclear-free world, but his speech was not heard for its entirety, for he added that, "Make no mistake: As long as these weapons exist, the United States will maintain a safe, secure and effective arsenal to deter any adversary, and guarantee that defense to our allies."[31]

The media latched onto the 2010 NPR and promoted that it raises nonproliferation to a major element of national nuclear weapons posture. It enshrines eventual nuclear disarmament as a central goal for U.S. nuclear weapons policy for the first time, and it sets the stage for possible future reductions in the role and numbers of nuclear weapons.[32] But, due to the security concerns faced by the U.S., the Obama Administration authorized upgrades to nuclear weapons and the building of a complete new triad of ICBMs, bombers, and submarines.

Summary

President Obama proclaimed his desire to reduce the role of nuclear weapons and ultimately free the world of them in his first major foreign policy speech, in Prague in 2009. In his first couple of years in office, he achieved some victories, such as the New START treaty with Russia, the Nuclear Security Summits, and the controversial Iran deal. But progress waned in his final year as more pressing crises commanded the White House's attention. President Obama used his administration to push for disarmament and a change of status of nuclear weapons by including his vision in the NSS, QDR, and NPR.

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[31] Barack H. Obama, "Remarks in Prague, Czech Republic," Daily Compilation of Presidential Documents 00228 (April 5, 2009): 3, http://www.gpo.gov/fdsys/pkg/DCPD-200900228/pdf/DCPD-200900228.pdf (accessed 14 April 2018).
[32] Hans M. Kristensen, "The Nuclear Posture Review," Fas.org, 14 April 2018, https://fas.org/blogs/security/2010/04/npr2010.

Although President Obama's goal was to make the world free of nuclear weapons, the lack of sustainment of the nuclear enterprise was crumbling from below. Weapons systems were aging out and complete revamp of the enterprise was needed. Before leaving office, a turn in security responsibility changed and a move toward the invigoration of the nuclear enterprise was started. New weapon systems were starting to be planned like the B-21 bomber (Raider), Ground-Based Strategic Deterrent (GBSD), and Long-Range Standoff Cruise Missile (LRSO) along with the new life extension programs, such as the B61-12 warhead. The building and reinvigoration of the nuclear enterprise seemed to contradict all of the rhetoric that President Obama was saying, but to make the U.S. nuclear forces safe, secure, and effective, a large increase and building up of the program had to be maintained to complete the obligation.

Chapter 11

Conclusion and Recommendations

North Korean Leader Kim Jong Un just stated that the 'Nuclear Button is on his desk at all times.' Will someone from his depleted and food starved regime please inform him that I too have a Nuclear Button, but it is a much bigger & more powerful one than his, and my Button works!

– President Donald J. Trump

Conclusion

This paper has reviewed every presidential administration for the past 75 years to look at and understand each policy and strategy that was discussed, requested, and recommended concerning nuclear weapons. The nuclear enterprise started with an advancement in technology at the end of WWII that changed the world. President Truman used the first nuclear weapon to help end WWII more quickly and set in motion a subset of international politics, relations, and superpower gamesmanship.

The nuclear enterprise was built on technology from its humble beginnings under the viewing stands of Stagg Field at the University of Chicago. Chicago Pile-1 was the first human-made self-sustaining nuclear chain reaction, created by a team led by physicist Enrico Fermi, which began the Manhattan Project. From these humble beginnings emerged enormous monolithic weapons systems that ultimately threatened nuclear armageddon.

Starting with the Truman Administration, the atomic bomb was built into a world-changing weapon that was initially considered merely a bigger bomb, but in the end, it was perceived as something drastically different. The atomic bomb was replaced by the thermonuclear or hydrogen bomb, which produced a substantially larger yield; a yield many times as powerful as an atomic weapon.

Along with the technological changes in the bomb, delivery systems changed. The bomber, the primary delivery platform of choice for the

early Cold War administrations, was built in large numbers. Thousands of bombers, including the Boeing B-29 Superfortress, Convair B-36, Boeing B-47 Stratojet, Boeing B-50 Superfortress, Boeing B-52 Stratofortress, and Convair B-58 Hustler, were produced, all with one primary objective: nuclear bombing. The advent of the ICBM, as well as the SLBM combined with the nuclear-powered submarine created a flexible and survivable retaliatory system that was the ace in the hole. Policy and strategy began to change from fighting a war to assured destruction. With hundreds of thermonuclear weapons atop missiles ready for immediate launch and available to both superpowers, a stalemate arose, due to the destructive power of the weapons.

Technology created a system that emphasized each aspect of a total nuclear war, understood by only the most senior leadership of both superpowers. The atomic age had a single goal with bombers—to win a conventional war with atomic weapons, as in WWII and Korea. Next came annihilation with bomber and missile delivery platforms, which introduced the ability for a quick and overwhelming response to a first strike. The advent of these systems was followed by a strategic pause, knowing that any form of war would result in complete destruction of superpowers from a retaliatory standpoint.

As much as technology changed the way nuclear war was going to be fought, the political landscape was also changing. International relations have been going on since politics was invented, and multiple countries throughout the history of the world have been global powers. However, no one country had the ability to destroy another global power in a matter of minutes until nuclear weapons were introduced. After WWII, the U.S. became the de facto superpower, but not for long, as the USSR soon also rose to superpower status with its own nuclear arsenal. Superpower on superpower stability was fragile, creating a cold war, but resilient at the same time due to the technological advances that both countries were making. Tit for tat played out at the beginning of the cold

war, but after a few years, an understanding was established that ushered in MAD. With deterrence, bipolar stability grew, as international norms began to solidify into negotiable terms that both countries could discuss.

Leadership, either good or bad, showed the world how the nuclear chess match would play out. Strong leaders like President Eisenhower built a policy that confronted norms and created a new policy; weak leaders like President Carter fell back on previous administrations and modified former thoughts. Indifferent leaders like President Obama took off ramps and changed the paradigm to control the narrative of the time.

45 years of this nuclear balance was brought to a culminating point: the collapse of the USSR. Bipolarity, deterrence theory, assured destruction, all changed from that point, a paradigm shift of epic proportions. The intellectual knowledge and thought used for a half-decade on superpower rivalries, statuses, and strategies, changed in an instant. A unipolar world with only one superpower stepped onto the world stage under President George H. W. Bush.

Under President Nixon, the nuclear arms race was slowed, and arms control became the new paradigm. Conventional limited wars were ongoing in addition to strategy for regional conflict vs. global conflict and how local advantages were to take place. The giant technical leaps that were attained concerning nuclear warfare were moved to conventional warfare, while hermetically sealed containers were placed around anything that had a nuclear smell in the 1990s. The atrophy started slowly with President George H.W. Bush, but PNIs, arms control, and treaties created an inferno that soon burned down the monolithic giant of the nuclear enterprise, along with the cadre and leaders that understood the beast.

From President Clinton and on, the nuclear enterprise shifted into a posture review. The NPRs were written as official documents and envisioned to express mainly the nation's nuclear posture. The secretive

and sensitive nature of nuclear weapons matters meant that many observers emphasized the most contentious aspects of nuclear policy. The NPRs were calculated processes focused on the nation's nuclear force posture, while policymakers widely acknowledged their influence on policy and strategy. Each of the NPRs intended to change the nuclear posture in specific ways; all three NPRs made open claims to breach with earlier group think and endorse vital force posture changes. In all three cases, the planned variations included a significant declaratory component. U.S. nuclear deterrence requirements had changed since the end of the Cold War as an outcome of changes in the international threat setting and the stresses of other national strategies.

Currently, the U.S. nuclear weapon enterprise features fewer warheads and less diversification concerning warheads and delivery systems. Additionally, the overall deterrence posture is much more complicated due to the development of cyber capabilities, among other influences. The NPRs try to clarify U.S. objectives by describing the significance of nuclear weapons policy in combination with other national policy goals. The U.S. deterrence objectives have remained consistent even if the meanings and descriptions of deterrence requirements have changed noticeably across each post–Cold War administration. Additionally, connections between each NPR include the reduced role of U.S. nuclear weapons, deterrence aims tied to present-day threats, and an enterprise that highlights diverse capabilities with lesser nuclear force levels.

Most recently, nuclear weapons strategy issues are back in the forefront of international relations. Today's U.S. national security strategy continues to emphasize the primary role of nuclear weapons and how they affect deterrence. Additional thought and discussion have focused on how nuclear weapon deterrence assures both the U.S. and allied security and international stability. But the fundamental issues concerning nuclear deterrence as a whole for U.S. national security

remains unresolved. Fundamentally divergent opinions, interpretations, and priorities regarding the best methods to deter enemies, the nature of national security threats, and the virtues of nuclear forces in the national deterrence posture continue to plague the U.S.

Recommendations

Building and Re-building

The changes seen in policy and strategy over the past 75 years concerning nuclear weapons have been obvious. Technology, leadership, and international relations have greatly influenced the fine-tuning of each administration's policies and strategies. To move forward, the U.S. needs to look at the past, as history does not repeat but does ebb and flow. The substantial move from nuclear strategy to nuclear disarmament has changed the fundamental thoughts on how the U.S. engages the rest of the world.

2018 in some respects looks similar to the late 1940s in the nuclear realm. Small numbers of weapons, an aging fleet of delivery platforms, and financial constraints are comparable between the two periods. A resurging Russia and a power-hungry China also play into the international relations dilemma that played out in the early 1950s which were responsible for building the Cold War.

Technology change is upon the U.S. in regards to the nuclear enterprise. From the time when President George H. W. Bush was in office, the U.S. has not tested a nuclear weapon, and all efforts have been moved to nuclear stewardship regarding the nuclear enterprise. Over 25 years, technology maturation has taken place around the world without the development of any new nuclear weapons in the U.S., therefore creating a shortfall of scientists, engineers, and machinists that have actually tested, built, or taken part in nuclear weapons design. The flexibility that is needed in today's nuclear enterprise is now unavailable because of the policy set in place under the Bush (41) administration.

Core weapon fundamentals need to be fixed from past weapons and integrated into new flexible weapons that can be designed for the threat of today and tomorrow. Unleashing the intellectual capital of our national laboratories to design modern weapons and future capabilities would change the paradigm in nuclear policy and strategy.

Starting with President Truman and NSC-68, a strategy was born to ramp up the military and focus on nuclear weapons to contain the communist threat. Truman's leadership to pursue a thermonuclear device along with multiplying the military expenditures by 300% to push atomic diplomacy was a bold decision. A parallel approach happened in President Reagan's and President Obama's tenures in office.

President Reagan faced a similar challenge with technological advancements and the building of SDI along with the modernization of the entire nuclear enterprise starting with the Peacekeeper missile, the reinstatement of the B-1, and the secret program of the B-2. During Reagan's tenure, detente had fallen by the wayside and Reagan looked at the motto of peace through strength in acknowledgment of the threat of communism.

Both Presidents Truman and Reagan dealt with a growth of the nuclear enterprise with technology and weapons system advancement. President Obama found himself in a very similar situation. The last update to the nuclear enterprise had been during the Reagan Administration with the advent of the B-2 and fielding of the B-1 and Peacekeeper missile with the latter two systems out of the nuclear arsenal. Furthermore, the last nuclear warheads were produced in the 1980s.

President Obama has put forth a budget to rebuild the nuclear enterprise. The selection of the B-21 and GBSD for the Air Force to replace the aging MMIII and B-2, along with the Columbia Class Submarine to replace the Ohio Class are set to keep the enterprise up to date.

Implications

President Eisenhower laid the foundation for a true nuclear policy with Massive Retaliation. Massive Retaliation put forth a plan to lower military spending with a reliance on nuclear weapons, thus placing a high threshold on war: only existential threats would give rise to total war. This posture worked until technology advancements caught up, and President Kennedy did not have the flexibility to deal with new threats facing the U.S. mainland from the USSR.

The Kennedy administration took up a couple of different new nuclear policies that worked, as well as some that were also abandoned. MAD was the main staple for the administration, creating nuclear plans like SIOP 63 that created an illusion of greater flexibility. Even though MAD was portrayed as the main policy, a change in nuclear testing started the conversation on slowing the Cold War down and making sure it did not get hot.

Regulation and treaties starting with the Kennedy and Johnson administrations were truly pivotal to keeping communications open for the next 30 years of the Cold War. Nuclear policy changed from that point to focus on limitations. The next four administrations focused on the larger and more restrictive arms reduction treaties, while also building more flexible and smaller tailored nuclear policies to deal with regional and small-scale wars. After the collapse of the Soviet Union, greater emphasis was put on arms limitations and reductions. President Obama put forth a goal of zero nuclear weapons in the world, but cautioned that until the world was completely free, the U.S. would maintain a safe, secure, and effective arsenal. This, however, along with 40 years of past rhetoric of nuclear policy, was not a strategy nor a policy. Limiting testing in the 1960s and then completely stopping testing in the 1990s, along with arms reduction starting with President Nixon through President Obama, are not policies nor strategies, but simply goals to associate numbers against a value.

Out of the past 70 years of nuclear policies and strategies, the experience of the Nixon Administration is instructive. Nixon was caught between the persistence of MAD and the desire for arms limitations agreements. His administration's actions helped to cool the Cold War and created détente, thus a nuclear strategy that worked—strategic sufficiency. An understanding of what nuclear weapons brought to the fight and knowledge of how the Cold War could end helped to calm all sides. Nixon's administration built on this understanding and brought a truly flexible system forward that incorporated the Schlesinger Doctrine of limited strikes and the NSDM-242 that could control escalation. The policies and strategy that were used by the Nixon Administration offer a starting place to dissect the U.S.' current situation and inform today's nuclear policy.

Combining flexible weapons design with willing and attentive leadership would create a cauldron of ideas that would ensure a fulfilling strategy and policy concerning nuclear weapons. The Obama administration, similar to the Carter administration, when confronted with significant changes in the nuclear security situation; a resurgent and hostile Russia, Chinese expansion, and reversed course and proliferation to DPRK and Iran, has revitalized the force development structure. Thus, trying to keep the nuclear mission armed with the latest tech, while not abandoning the idea of a nuclear-free world.

No true nuclear strategy has been outlined in decades, but subsequent administrations should continue to create a strategy that incorporates both leading towards disarmament and hedging with new technologies. Current and future U.S. leaders need to have a nuclear strategy that spells out what weapons we need now and, in the future, how we will use or employ these weapons, and clear, achievable objectives in the event we do use these weapons. A strategy for nuclear weapons is a key international relation stepping stone that can be used for negotiations, bargaining, deterrence, and compellence.

Bold leadership in the age of nuclear weapons is needed to demonstrate the seriousness of the issue. Leadership in the U.S. for the last couple decades has been understandably distracted by the post 9/11 conflicts, and has therefore been reluctant to engage in new thinking about nuclear weapons. Only through leadership can the culture change and the nuclear enterprise can be accepted into the mainstream as a valuable component of our security, not merely a semantic gesture of primacy, but substantive policy.

Using bold leadership and codifying nuclear strategy and policy will bind the ways and means needed to execute nuclear policy and strategy successfully. Over the past two decades, nuclear policy and strategy come up only at the beginning of a new administration. Specifically, the NPR is usually written within one year of the newly elected administration and subsequently forgotten about until the next administration. The contemporary intervals for directing an NPR are not best to support an optimized report or policy outcomes. Thus, a more predictable NPR timeline, conducted at four-year intervals immediately following each presidential election, could prove beneficial. The most significant advantages identified would include improved reaction to security trials, reduced pressure on the NPR produced by the one-and-done format contributing to implementation impediments, better alignment with other administration strategy documents, as well as organizational and institutional gains.[1] Then, and only then, might the U.S. once again possess a true nuclear "enterprise.

[1] Courtney N. Stewart, "Should the Nuclear Posture Review be Conducted More Frequently?" in A Collection of Papers from the 2010 Nuclear Scholars Initiative, ed. Mark Jansson (Washington, DC: Project on Nuclear Issues, Center for Strategic and International Studies, 2010).

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