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**Ten Continuities in U.S. Nuclear Weapons Policy,
Strategy, Plans, and Forces**

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Introduction

Each presidential administration tends to highlight differences rather than similarities with its predecessor, even when the prior administration has been of the same party. The emphasis on differences arises in mobilizing support to remedy inherited problems (whether real or perceived), in carrying out (or at least appearing to fulfill) campaign promises, in establishing a record that appeals to key constituencies, and in laying the groundwork for a favorable historical legacy.

This need to be distinct applies to both domestic and national security policies and programs, including those related to U.S. nuclear forces. Thus, the Eisenhower administration had its “New Look.” The Kennedy and Johnson administrations at various times promoted their strategies for “counterforce,” “flexible response,” and “assured destruction.” The Nixon administration called for “strategic sufficiency” and pursued (as did the Ford administration) “flexible nuclear options.” The Carter administration adopted a “countervailing strategy.” The Reagan administration gave prominence to its strategic modernization program and Strategic Defense Initiative. The George H.W. Bush administration took Presidential Nuclear Initiatives that dramatically cut forces following the end of the Cold War. And both the Clinton and George W. Bush administrations conducted Nuclear Posture Reviews, with the latter announcing a “New Triad” at the completion of its assessment.

While the changes from one administration to the next often receive the most attention, the continuities in nuclear policies, plans, and programs are striking. These continuities span the Cold War and post-Cold War decades and the tenures of Democratic and Republican presidents alike. They result from a number of enduring factors, including the fundamental nature of nuclear weapons, the persistence of certain types of threats, the long-standing commitments to allies, the inadequacies of nonnuclear alternatives, the often limited change in organizations and personnel with nuclear responsibilities, and the reluctance of officials to gamble with the nation’s nuclear posture. It is useful for defense planners and others to understand these continuities because they represent some rough boundaries within which a new administration will shape its nuclear strategy and forces. No administration starts with a blank slate. More likely than not, it will operate within broad contours established in the past. Sharp departures certainly are possible, but some of the accumulated legacies from previous administrations will not be easily shed.

This paper discusses ten continuities in nuclear weapons policy, strategy, plans, and forces that will affect the course charted by a new administration. While there are others, these are among the continuities of basic importance. Each continuity is stated as a clear-

cut proposition that, based on the evidence, most or all administrations to date would accept.

The ten continuities are as follows:

1. Nuclear arms are special weapons and not just more powerful versions of high-explosive munitions (see pp. 2-4).
2. The safety, security, and authorized control of nuclear weapons are essential (pp. 4-5).
3. Alternatives to nuclear weapons, where possible, are preferred (pp. 5-7).
4. The roles for nuclear forces go beyond the deterrence of nuclear use (pp. 7-11).
5. The threat of nuclear retaliation, not defenses, provides the primary protection against nuclear attack (pp. 11-14).
6. Nuclear forces must not be inferior to those of another power (pp. 14-17).
7. Nuclear forces support security commitments to defend key allies (pp. 17-21).
8. The option to use nuclear weapons first should be retained (pp. 21-26).
9. A minimum deterrence force is inadequate to meet defense requirements (pp. 26-31).
10. A triad of strategic nuclear forces is valuable for its resilience, survivability, and flexibility (pp. 31-36).

Continuities

This discussion of continuities is not intended to be exhaustive or to give a comprehensive review of nuclear history for the last 60 years. Instead, the continuities are briefly described and illustrated with examples drawn from the historical record. That record includes presidential directives and other statements, memoirs, interviews, official histories, government reports, congressional hearings, and secondary sources. (References can be found in the notes at the end of the paper.)

1. Nuclear arms are special weapons and not just more powerful versions of high-explosive munitions.

In general, presidents and their principal advisers, as much as any anti-nuclear activist or average citizen, appreciate that nuclear weapons are *sui generis* because of their

tremendous destructive potential and unique set of physical effects (large explosive blast, direct nuclear radiation, thermal radiation, radioactive fallout, and electromagnetic pulse). The devastating results of the Hiroshima and Nagasaki attacks, terrifying images from aboveground nuclear tests, and sobering predictions of the consequences of nuclear war have always strongly affected the decisions and actions of top officials. Lyndon Johnson recounted that the moment he relinquished the presidency, he felt immense relief at no longer having responsibility for authorizing the use of nuclear weapons.¹ President Carter recalled that, “All the glib talk about ICBM’s, MIRV’s, SLCM’s, and GLCM’s...tended to lull some people into indifference or resignation about the unbelievable destruction they represented. That horror was constantly on my mind.”² President Reagan, often caricatured as a Strangelovian figure, in fact was quite fearful of the possibility of nuclear war, saw his nuclear buildup as a means of pressuring the Soviet Union into deep negotiated nuclear cuts, pursued the Strategic Defense Initiative (SDI) as an alternative to the balance of terror, and was sympathetic to the goal of nuclear abolition.³ While President Eisenhower at first considered nuclear firepower a cheaper substitute for large general-purpose forces and a solution for drawn-out conventional wars, he moved away from this view with the appearance of megaton-size thermonuclear weapons and increases in the Soviet nuclear arsenal.⁴ (Note that early in his first term, Reagan directed that, “Nuclear forces will not be viewed as a lower-cost alternative to conventional forces,” though “the possible use of nuclear weapons must remain an element in our overall strategy.”)⁵

The special status successive administrations have accorded nuclear weapons has had a number of important implications:

- Nuclear weapons are seen from the top as weapons of last resort; nonnuclear options are preferred.
- The possibility of nuclear use is tied to a small set of contingencies in which the security stakes for the United States and its allies would be high. (Presidents have been more willing, however, to employ nuclear *threats* in a wider range of crises.)
- Oval Office occupants are extremely risk averse, not reckless, with regard to questions of nuclear use.
- Detailed characteristics of nuclear weapons (level of explosive yield, for example) are less salient to high officials than the fact the weapons are nuclear.
- Control of nuclear weapons is highly centralized in the president as commander in chief; predelegation of authority to lower-level commanders to use nuclear weapons has been the rare exception rather than the rule.
- An elaborate (if imperfect) system of organizational, procedural, and technical safeguards exists to prevent the accidental or unauthorized use of nuclear weapons.

All of the above are directly attributable to the belief of the political authorities, across administrations, that nuclear weapons are special and must be treated accordingly. Advantageous and, for some cases, essential to U.S. and allied security, they also present grave potential dangers to be avoided.

2. The safety, security, and authorized control of nuclear weapons are essential.

In a directive issued to the secretary of defense, the chairman of the Joint Chiefs of Staff (JCS), the secretary of energy, and other ranking officials, the first President Bush noted, “The safety of nuclear weapon systems remains of paramount importance to the security of the United States.”⁶ An accident involving the detonation of one or more nuclear weapons could kill or injure thousands or millions in another country or in the United States itself. If the other country were nuclear-armed, an accidental attack could trigger nuclear use against the United States. Unauthorized use of nuclear weapons by elements within the military chain of command could cause a nuclear conflict or hinder de-escalation of a war. Stolen weapons could give great lethal and coercive power to a terrorist group, a criminal organization, or a previously nonnuclear state.

For these reasons, every administration, from that of President Truman on, has sought to maintain tight control of nuclear weapons. Since the late 1940s, various measures have been instituted to ensure against accidental or unauthorized use, including: the vesting of the president (or duly designated successors) with the authority to order the use of nuclear weapons; procedures for authenticating orders for nuclear use; protection of nuclear weapons storage sites; the two-man rule for personnel with nuclear responsibilities; and permissive action links (electromechanical locks) on nuclear weapons.⁷ These measures have proved effective, although accidents involving nuclear weapons have been reported (for example, crashes of aircraft carrying nuclear bombs and the explosion of a nuclear-armed Titan missile).⁸ Presidents generally have been unwilling to predelegate nuclear release authority, although Eisenhower and at least some of his successors did this for certain emergency cases where time constraints or other conditions would prevent commanders from securing presidential approval. (The chief of the North American Air Defense Command, for example, could order the use of nuclear air-to-air and ground-to-air missiles to intercept Soviet bombers before they hit the United States.)⁹

Concerns about safety, security, and control have had real consequences for the nuclear forces fielded by the United States and how those forces are operated. The perceived dangers of nuclear missile launchers traveling along the country’s highways or railroads were among the reasons the United States did not deploy road- or rail-mobile intercontinental ballistic missiles (ICBMs) in response to the increased vulnerability of the silo-based Minuteman force. (In contrast, mobile ICBMs were built by the Soviet Union and the People’s Republic of China, both authoritarian states with much greater internal security.) The short-range attack missile, an air-to-ground weapon that penetrating bombers carried to suppress air defenses, was withdrawn by the George H.W. Bush administration and eventually retired by the Clinton administration in large part because of questions about the safety of its nuclear warhead.¹⁰

Continuous airborne alert, a peacetime practice to ensure at least a portion of the bomber force survived a surprise attack, was ended by the Johnson administration after a nuclear-armed B-52 crashed and burned near Thule, Greenland. (In a similar incident two years earlier, a B-52 crashed near Palomares, Spain. Two nuclear bombs underwent nonnuclear explosions on impact and another bomb temporarily was lost in waters off the coast.)¹¹ Launch on warning—firing ICBMs if sensors detect incoming enemy missiles—repeatedly has been rejected as a tactic for solving the problem of silo vulnerability; the risks of false warning have been judged too great. (Launch under attack—firing ICBMs after nuclear detonations on U.S. soil—has been less objectionable.)¹² Centralized control of nuclear forces has been of sufficient priority that decision-makers have been willing to accept some risk that the resultant command system could be “decapitated” by an enemy.¹³

In the current period, the Bush administration has cited improved safety and use control as one of the reasons for developing and deploying a Reliable Replacement Warhead.¹⁴ The continuing importance the political authorities attach to the safety, security, and authorized control of nuclear weapons also can be seen in the sharp negative reaction to the August 2007 incident in which six nuclear cruise missiles inadvertently were loaded on a B-52 and ferried from an Air Force base in North Dakota to a base in Louisiana. This incident, along with an earlier episode in which ICBM warhead fuzes mistakenly were shipped to Taiwan, eventually led to the removal of the secretary of the Air Force and the Air Force chief of staff.¹⁵

3. Alternatives to nuclear weapons, where possible, are preferred.

Given the choice, presidents and senior officials prefer peace to war, diplomacy to military force, threat of force to use of force, conventional conflict to nuclear war, and, it should be added, limited nuclear use to unrestrained nuclear war. Resort to nuclear weapons could be extremely dangerous, cause enormous destruction (notably noncombatant casualties and damage to civilian infrastructure), produce major political-military consequences well beyond the immediate context (many of which would be unforeseeable), end the half-century tradition of nonuse, and create lasting and possibly unfavorable precedents. No president has found the decision to use military force an easy one; ordering the use of nuclear weapons would be exceptionally hard. In addition, presidents prefer nonnuclear instruments because in most cases they are deemed better suited to the demands of a crisis or potential conflict, more consistent with U.S. interests at stake and objectives to be met, and less likely to incur disproportionate risks. By the same token, nonnuclear military threats often are perceived as more credible deterrents to conventional aggression. In light of these considerations, all administrations have sought, where possible, alternatives to nuclear weapons (although, as noted, the Eisenhower administration and the military establishment in the 1950s pursued nuclear capabilities as alternatives to conventional weapons). The presidential preference for nonnuclear alternatives has been evident at the strategic, operational, and tactical levels of conflict. Five examples follow.

In 1948, President Truman was briefed on a strategic war plan in which U.S. bombers would conduct an atomic retaliatory attack against Soviet government centers, industrial facilities, and transportation choke points. After the briefing, he directed the JCS to draw up an alternative plan for an air offensive in which only high-explosive bombs would be used. Truman, who less than three years earlier had ordered the bombings of Hiroshima and Nagasaki, wanted a conventional-only plan because he believed that the atomic bomb soon might be “outlawed” and that, in any event, the American public would not support the use of atomic weapons for “aggressive purposes.” (Work on the plan was started but never completed due to opposition from within the government, a worsening crisis over the status of Berlin, and the infeasibility of a successful conventional bombing campaign against the Soviet Union.)¹⁶

The chief aim of “flexible response,” the strategy developed by the Kennedy administration and pressed on the European allies, was to strengthen the ability of NATO to mount an effective conventional defense and thereby reduce the need for nuclear escalation to stop an advance by the larger ground forces of the Warsaw Pact. (If NATO conventional forces did falter, the strategy called for graduated nuclear responses, from tactical to theater to strategic nuclear use, to coerce the Soviet leadership into halting its attack.) U.S. nuclear forces had been tied to the defense of Western Europe even before the formation of NATO. The nuclear superiority of the United States was seen as offsetting deficiencies in the conventional capabilities of the alliance. Soviet acquisition in the 1950s of the ability to launch nuclear strikes against the United States, and the prospect that the Soviets eventually would achieve nuclear parity (or better), raised doubts on both sides of the Atlantic regarding continued dependence on U.S. nuclear forces as a makeweight for NATO conventional weakness. (“Would the United States trade New York for Hamburg?” was the catchphrase for these doubts.) In the end, NATO failed to reduce its nuclear reliance through conventional force improvements, a shortcoming that persisted through the end of the Cold War. Flexible response, however, endured as the strategy of the alliance.¹⁷

Nuclear options were considered for the 1991 war against Saddam Hussein, but quickly dismissed by Bush administration officials. Secretary of Defense Richard Cheney and General Colin Powell (JCS chairman) looked at possible nuclear options for the sake of completeness, but they were strongly inclined against any nuclear use and confirmed in their position when a closely held analysis by Powell’s staff found that knocking out just one Iraqi armored division dispersed in the desert would require multiple tactical nuclear weapons.¹⁸ In the war, Coalition conventional forces proved able to defeat Saddam and his military in a six-week air campaign and a 100-hour ground offensive. Before the war began, President Bush and his senior advisers also had privately ruled out nuclear retaliation for any Iraqi chemical or biological attacks, while publicly maintaining a calculated ambiguity about the possibility of nuclear use. Their preferred alternative to nuclear retaliation was an intensified and expanded onslaught of conventional air strikes against Saddam’s regime and the Iraqi economic base. In their accounts of decision-making for the war, the president and other top officials (including Secretary of State James Baker, presidential national security adviser Brent Scowcroft, and Scowcroft’s

deputy, Robert Gates) never explained why nuclear use was excluded, perhaps because the reasons to them seemed obvious.¹⁹

Since the advent of the SDI, policy for missile defense explicitly has favored interceptors armed with nonnuclear kill vehicles rather than nuclear warheads. The Safeguard missile defense system, briefly operational during the Ford administration, of necessity included nuclear interceptors; sensor and data-processing technologies at the time were insufficient for nonnuclear kills. With technological advances, nonnuclear interceptors became feasible and preferred for missile defense. In guidance for the SDI program, President Reagan ordered “principal emphasis on technologies involving nonnuclear kill concepts,” while permitting research on nuclear concepts as a hedge against Soviet breakout from the Anti-Ballistic Missile (ABM) Treaty.²⁰ Early in the George W. Bush administration, the emphasis on nonnuclear defenses was affirmed by the director of the Missile Defense Agency after members of the Senate raised concerns about reports that nuclear interceptors were under study.²¹

Finally, the results of the Bush administration’s 2001 Nuclear Posture Review (NPR) also reflected the long-standing high-level preference for alternatives to nuclear weapons. The NPR looked not only at the purposes, capabilities, and problems of existing U.S. nuclear forces and related infrastructure, but also the possibility that strategic defenses (missile, air, and civil defenses) and long-range nonnuclear strike systems (conventionally armed ballistic missiles, for example) eventually might take over from the nuclear forces some of their responsibilities for assuring allies of U.S. security commitments, dissuading adversaries from competing with the United States, deterring coercion or attacks against the United States and its allies, and defending against and defeating aggression. The NPR determined that investments in “restoring the defense infrastructure, developing and deploying strategic defense, improving...command and control, intelligence, planning, and non-nuclear strike capabilities” could “make the U.S. more secure while reducing...dependence on nuclear weapons.”²²

4. The roles for nuclear forces go beyond the deterrence of nuclear use.

Many support the notion that nuclear weapons serve only to deter the use of other nuclear weapons. The idea has the intuitive appeal of symmetry (nuclear for nuclear) and offers a standard by which the roles and capabilities of nuclear arsenals presumably could be limited. Whether nuclear weapons in fact have deterred nuclear use or the absence of nuclear war has resulted from other causes is an open question. What is known is that every president from Truman on down has seen nuclear weapons as more than simply a deterrent to nuclear attack. President Roosevelt initiated the Manhattan Project to prevent Nazi Germany from developing and using atomic weapons first.²³ His action was consistent with the “nuclear for nuclear” notion. But his successor ordered that the deadly product of that huge undertaking be used to shock Imperial Japan, an enemy without nuclear weapons, into ending the war in the Pacific, a conflict waged with conventional arms.²⁴ Since then, presidents have considered nuclear use or made nuclear threats to reinforce crisis diplomacy, deter large-scale conventional aggression, prevent a

major conventional defeat, counter chemical or biological attacks, and hold at risk priority targets able to withstand nonnuclear strikes. Through eleven administrations, U.S. policy has never been to restrict the ambit of nuclear weapons to the deterrence of nuclear use.

Presidents have flexed nuclear muscle in a number of crises and conflicts. This has involved noticeable increases in the readiness of nuclear-capable forces and warnings (public or private, explicit or veiled) that nuclear weapons could be used in response to armed aggression. Raising the nuclear specter has had two purposes: to signal that the United States has substantial interests at stake—substantial enough to risk nuclear war—and to give a coercive edge to U.S. diplomatic efforts. The administrations and circumstances in which nuclear threats have been made include the following:

- *Truman administration*: reaction to the downing of U.S. aircraft over Yugoslavia, 1946;²⁵ Berlin blockade, 1948;²⁶ Korean war, 1950-1951;²⁷
- *Eisenhower administration*: Korean war, 1953;²⁸ Taiwan Strait crises, 1954 and 1958;²⁹ Suez crisis, 1956;³⁰ Lebanese crisis, 1958;³¹
- *Kennedy administration*: Berlin crisis, 1961;³² Cuban missile crisis, 1962;³³
- *Nixon administration*: Vietnam war, 1969;³⁴ October war, 1973;³⁵
- *Carter administration*: perceived Soviet danger to the Persian Gulf region, 1980;³⁶ and
- *George H.W. Bush administration*: Persian Gulf war, 1991.³⁷

Explanation for the relative scarcity of U.S. nuclear threats after 1973 is a matter of speculation. The fact that the United States and the Soviet Union did not square off in any high-stakes, war-prone confrontation during the remainder of the 1970s and through the 1980s certainly is one of the reasons. (Even if such a crisis had occurred, adverse aspects of the U.S.-Soviet military balance might have inhibited a president from making a nuclear threat.) The end of the Cold War and the Soviet collapse likewise should be taken into account. With the exception of the 1991 Gulf war, when the Bush administration raised the prospect of nuclear retaliation for Iraqi chemical or biological use, post-Cold War presidents have not found that the circumstances of recent confrontations (the 1994 Korean nuclear crisis, the conflicts with Serbia and its allies, the 1995-1996 Taiwan Strait crisis, the Afghan and Iraq wars) warrant resort to nuclear threats. In different circumstances—perhaps a severe crisis in which U.S. vital interests were menaced by a nuclear great power—the perceived need for a nuclear threat also might be different.

In addition to their utility for coercive and deterrent threats, nuclear weapons have been seen as counters to certain conventional assaults. During the Cold War, U.S. and NATO plans called for the use of “nonstrategic” nuclear forces (European-based artillery,

aircraft, and missiles) to help disrupt a Warsaw Pact invasion and warn Soviet leaders of the greater danger they would court by continuing their aggression.³⁸ In the Nixon administration, Defense Department officials, prodded by the president's national security adviser, Henry Kissinger, examined how U.S. nuclear forces also might be used in regional conflicts outside the NATO Central Front (perhaps in a Sino-Soviet war, where the U.S. interest might lie in preventing a Chinese defeat but no suitable conventional force options would be available).³⁹ Presidential guidance issued in the last year of the Carter administration instructed defense planners that "[t]he employment of nuclear forces must be effectively related to operations of our general purpose forces."⁴⁰ According to a White House aide who helped develop the guidance, this meant strategic nuclear bombers and ballistic missiles would attack Soviet bloc conventional forces to support U.S. and allied theater campaigns in Europe and East Asia.⁴¹ It was also during President Carter's tenure that defense officials weighed whether nuclear weapons would be required to halt a possible Soviet invasion of Iran, given the conventional disadvantages then facing the United States in Southwest Asia.⁴²

In recent conflicts, the United States has enjoyed conventional superiority, obviating any need to reinforce general-purpose capabilities with nuclear arms. This might not be true in future contingencies where once again an adversary held a significant edge in conventional military power, even if that advantage were only local (confined to a specific region) or temporary (evaporating with the eventual arrival of additional U.S. expeditionary forces). As a high-ranking defense official in the Clinton administration explained to a congressional committee, "In general, we do not now foresee circumstances in which it would be in our interest to use nuclear weapons in response to a purely conventional attack. However, we would assess the situation in light of the circumstances then prevailing."⁴³

From the Cold War to the present, nuclear weapons have been considered part of the U.S. deterrent to chemical or biological use. The threat of nuclear retaliation has been seen as augmenting other capabilities for preventing chemical or biological attacks and as a substitute for the absence of biological and subsequently chemical weapons from the U.S. munitions inventory. The possibility of nuclear escalation, in combination with the threat of retaliation in kind and protection by defensive measures, was intended to deter the Warsaw Pact from attacking NATO forces with chemical or biological weapons.⁴⁴ (The option of like retaliation for biological attack was abandoned when President Nixon ended the U.S. program for offensive biological warfare in 1969.)

As the Cold War receded, officials of the George H.W. Bush administration made veiled nuclear threats to deter Saddam from resorting to chemical or biological use against Coalition forces in the Gulf war. (The under secretary of defense for policy during the Clinton years referred to these threats as a valuable deterrent and judged that they had "a powerful effect" on the Iraqi ruler.)⁴⁵ After the Gulf war, as the dangers of proliferation loomed larger, the Bush administration incorporated the experience of that conflict into a policy that declared "[a] strong U.S. nuclear force provides a secure retaliatory capability that serves to deter the use of weapons of mass destruction while providing unambiguous warning to potential aggressors who have acquired these capabilities or are in the process

of acquiring them.”⁴⁶ On repeated occasions, the Clinton administration also took the position that nuclear threats could be a deterrent to the use of weapons of mass destruction (WMD). For example, in the Senate ratification hearings on the Chemical Weapons Convention—a treaty under which the United States gave up chemical weapons and chemical retaliatory options—then-Secretary of Defense William Perry included nuclear weapons among the means for responding to a chemical attack.⁴⁷ Policy guidance signed by President Clinton recognized nuclear weapons as a deterrent against the full range of weapons of mass destruction.⁴⁸ Like its predecessors, the George W. Bush administration has said that nuclear weapons can serve to deter not only nuclear but also chemical and biological use.⁴⁹

It should be noted that the continuity in the policy for deterring chemical or biological attack is reflected in the language used by the present and the two prior administrations. In late 1990, Secretary of Defense Cheney warned, “were Saddam Hussein foolish enough to use weapons of mass destruction, the US response would be absolutely overwhelming and it would be devastating.”⁵⁰ Though deliberately ambiguous, this statement carried an implied threat of nuclear retaliation. In 1994, Deputy Secretary of Defense John Deutch intentionally echoed Cheney’s words: “For obvious reasons, we do not choose to specify in detail what responses we would make to a chemical attack. However, as we stated during the Gulf War, if any country were foolish enough to use chemical weapons against the United States the response will be ‘absolutely overwhelming’ and ‘devastating.’”⁵¹ In 1996, Secretary of Defense Perry advised “[a]nyone who considers using a weapon of mass destruction against the United States or its allies [to] first consider the consequences” and added that while “[w]e would not specify in advance what our response would be, ...it would be both overwhelming and devastating.”⁵² In 1998, Perry’s successor, William Cohen, lent his voice to the refrain: for “[a]ny nation that would threaten us through nuclear, chemical, or biological weapons, we have the ability to respond with forces and overwhelming force that could devastate them.”⁵³ And in 2008, presidential national security adviser Stephen Hadley made this policy continuity explicit when he told a public audience that, “the United States has made clear for many years that it reserves the right to respond with overwhelming force to the use of weapons of mass destruction against the United States, our people, our forces and our friends and allies.”⁵⁴

Along with their roles in coercive diplomacy and deterrence of nonnuclear aggression, nuclear weapons have been regarded as valuable for their potential to “hold at risk” and, if necessary, neutralize critical targets that cannot be attacked effectively by nonnuclear means. These can include targets covering a wide area, targets that must be eliminated quickly and with a high degree of certainty, targets whose location cannot be determined with precision, and targets hardened against attack through the use of steel-reinforced concrete and underground construction.

Hard and deeply buried command bunkers are examples of the latter type of target. Since the early years of the Cold War, the command-and-control centers of opposing countries have been targeted by U.S. nuclear forces. Reviews of nuclear strategy by the Nixon, Carter, and Reagan administrations placed special emphasis on the need to target the

command posts used by enemy political and military leaders, not simply for the purpose of disrupting a nuclear attack against the United States or its allies, but to deter such an attack by threatening those leaders with the loss of what they appeared to value most—their collective rule and individual lives.⁵⁵ After U.S. intelligence efforts revealed the extent of the Soviet “bunker archipelago” and the ability of certain deep underground facilities to withstand attack by most types of U.S. nuclear weapons,⁵⁶ the Reagan administration in 1987 reversed the retirement of the multimegaton B53 bomb in order to have some means of holding those targets at risk, pending the development and deployment of an earth-penetrating nuclear weapon.⁵⁷ A decade later, the Clinton administration produced the earth-penetrating B61-11 bomb to replace the larger yield, less safe, and harder to deliver B53 as a weapon for threatening high-value underground targets in Russia and elsewhere.⁵⁸ The Bush administration subsequently favored study of a more effective follow-on to the B61-11—the Robust Nuclear Earth Penetrator (RNEP)—that could be used to target the growing number of hard and deeply buried facilities in several hostile countries. RNEP was described by Bush officials as an extension of extant policy and capability:

What we are doing is almost identical to what the [Clinton] Administration did (they adapted the B61-11 to penetrate a few meters into soil; we want to do the same thing into rock). [RNEP] does not represent a change from our policy of deterrence. Deterrence requires we be able to hold at risk that which an adversary values. Since more and more we see a move toward putting things underground, our efforts to determine the potential effectiveness of an earth-penetrating weapon reflect a continued emphasis on enhancing deterrence.⁵⁹

RNEP encountered congressional opposition, however, and the administration ended the project, though without eliminating the requirement for an improved earth-penetrating nuclear weapon.⁶⁰

The roles assigned nuclear weapons, then, have not been limited to deterring nuclear attack, but also have included countering nonnuclear aggression—coercion, conventional assault, chemical and biological use—and holding at risk critical targets for which conventional strike capabilities are ill-suited. Moreover, these other roles have been endorsed by a diverse set of presidential administrations.

5. The threat of nuclear retaliation, not defenses, provides the primary protection against nuclear attack.

Deterrence and defense are two of the ways in which the United States has sought to deal with the danger of nuclear attack over the last 60 years. (Arms control and improved relations with adversaries are two others.) Reliance has been placed on preventing attack through deterrence by retaliatory threats rather than protecting the populace and economic base through active (air and missile) and passive (civil) defenses. Strategic defenses for the homeland have been the poor cousins of nuclear offensive forces, despite some periods in which defenses have received increased attention and funding.

Under the Truman and Eisenhower administrations, a nationwide air defense network was built to guard against Soviet bombers.⁶¹ The network comprised 1,000 fighter-interceptors, a few hundred surface-to-air missiles, a comparable number of radars, and related command-and-control systems. At the time President Eisenhower left office, Air Defense Command had 6 percent of the defense budget, while the share for strategic nuclear forces was 27 percent.⁶² (For comparison, roughly 2 percent of the defense budget was allocated for the strategic forces in 2008.)⁶³ Beginning in the mid-1960s, however, air defense during succeeding administrations underwent a long decline in which its diminished missions were to enforce airspace sovereignty and deny enemy aircraft a free ride.⁶⁴ This decline in large part was due to the emergence of Soviet long-range ballistic missiles, their replacement of bombers as the primary threat to the U.S. homeland, and the lack of a defense against missiles. (“Why lock the back door when the front door is open?” went the argument.) By the time of the 9/11 attacks, the air defense sector for the northeastern United States had only four fighters on alert.⁶⁵

Research programs for missile defense have been underway since the late 1940s, but the United States has never deployed a missile defense system approaching the scale of the air defense network operating in the first part of the Cold War.⁶⁶ The Nike-X/Sentinel system for defense against limited attacks, particularly one by a future Chinese missile force, was given serious consideration during the Johnson administration, but not fielded. The Safeguard system, pursued by the Nixon administration as a defense for missile silos and a bargaining chip in strategic arms talks, not as a population defense, was deployed for less than a year during the Ford administration. The tightly constrained research program of the Carter administration focused on advanced technology options, including those for silo defense. President Reagan’s strong personal interest in defense against nuclear weapons gave a new impetus to missile defense, producing the Strategic Defense Initiative, a large-scale research effort initially aimed at “rendering . . . nuclear weapons impotent and obsolete.”⁶⁷ The principal missile defense design (or “system architecture”) fashioned during his administration, however, was for a system that would serve largely as an adjunct to U.S. strategic offensive forces by breaking up a Soviet counterforce first strike.⁶⁸

With the end of the Cold War, President George H.W. Bush reoriented the SDI to address the threat from ballistic missile proliferation.⁶⁹ The Clinton administration in its missile defense program emphasized development of capabilities to protect U.S. forces and allies overseas (theater missile defense) rather than the United States itself (national missile defense).⁷⁰ Nonetheless, work on national missile defense continued and the president, with the urging of Congress, signed the 1999 National Missile Defense Act, which made it “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).”⁷¹ In 2004, the George W. Bush administration became the first in 30 years to deploy a missile defense system based in the United States and the first ever to field a system intended to protect the population rather than military forces alone. The system has some capability against North Korean long-range ballistic missiles and, with

upgrades, also will provide a degree of protection against similar Iranian missiles.⁷² The overall missile defense program of the Bush administration has been guided by a policy that is expressly consistent with the Missile Defense Act, aims at defending the United States, its deployed forces, allies, and friends, and sees missile defense as a counter to coercive “rocket rattling” and a hedge against the failure of deterrence. At the same time, the policy considers missile defense “not a replacement for an offensive response capability, [but] an added and critical dimension of contemporary deterrence.”⁷³

While the air defense buildup occurred mostly during the years of the Eisenhower administration, and missile defense received high priority in both the Reagan and George W. Bush administrations, civil defense has been a focus of White House attention only briefly.⁷⁴ In the early part of the Kennedy administration, the combination of presidential interest, a strategy to limit damage in the event of nuclear war, an international confrontation (the 1961 Berlin crisis), public alarm, and energetic leadership at the Pentagon produced a one-year spike in the civil defense budget (fiscal year 1962) and several steps toward a national fallout shelter program. Before and after, however, civil defense languished in comparison to strategic offensive forces and, in general, other strategic defenses. Policy statements supporting civil defense were not matched by the necessary programmatic changes and budgetary commitments. Administrations generally have pursued civil defense on the cheap, designating shelter space in existing buildings rather than constructing dedicated shelters, preparing plans for urban evacuation without making adequate provision for evacuees in relocation areas, combining nuclear attack with natural disaster preparedness, and placing much of the burden for preparedness measures on the states. Throughout the nuclear era, any protection by civil defense, like that from air and missile defenses, has been subordinate to the prevention of attack by deterrent threats. Two presidential directives, one by President Carter, the other by President Reagan, underscored this point, with both documents using identical language: efforts to improve civil defense complement rather than change “primary U.S. reliance on strategic offensive forces as the preponderant factor in maintaining deterrence.”⁷⁵

A number of reasons account for the continuing dominance of deterrence over defense in U.S. policy and strategy regarding nuclear weapons. A nuclear attack against the United States would be so catastrophic that presidents and their advisers have made preventing such an event rather than limiting its consequences the clear first order of business. Many have doubted the effectiveness of active and passive defenses, especially as the threats from opposing forces evolve, while counting on the effectiveness of the offense-based deterrent. Many also have questioned the cost of strategic defense, considering it too high or a diversion of funds from nuclear offensive forces and other military capabilities thought to make greater contributions to the nation’s security. Strategic defense often has been without powerful institutional advocates in the armed services or the civilian bureaucracy who can respond to these doubts and questions. Finally, some administrations have been influenced by the theory that defenses to protect the populace and economic base are antithetical to a stable military balance. According to this view, defense might: 1) provide—or seem to provide—a shield behind which the United States could launch a nuclear first strike in a war-prone crisis; 2) cause an adversary to believe

this was the case and consequently preempt such a strike; and 3) prompt opponents to embark on reactive nuclear buildups to preserve their retaliatory capabilities against defended targets. This thinking was reflected in the ABM Treaty President Nixon signed in 1972. The treaty, along with its 1974 protocol, not only banned a nationwide missile defense, but exerted an inhibiting effect on strategic defense in general until the December 2001 announcement by President Bush that the United States would withdraw from the treaty. Changing conditions—less demanding or less deterrable threats, more cost-effective capability options, increasing institutional support, continuing commitment by future presidents—could lead to a greater reliance on strategic defense than has been the case historically.

It should be noted that the preponderance of offensive forces in relation to defensive capabilities to a certain extent has resulted in a sharing of duties between the two, where offense offers some defense and defense aids deterrence. With the United States lacking adequate defenses, every administration has approved war plans that when executed would attempt to limit damage from enemy attacks through strikes against opposing offensive forces, through constrained strikes intended to induce similar restraint by the adversary, or through both tactics. Similarly, missile defense in the past has been charged with supporting deterrence by protecting U.S. retaliatory capabilities and by making the success of an enemy attack more uncertain and presumably less likely. Civil defense, too, sometimes has been viewed by the White House as “an element of the strategic balance” that can “[e]nhance deterrence and stability in conjunction with strategic offensive and other strategic defensive forces.”⁷⁶ But defenses have always played the subordinate part.

6. Nuclear forces must not be inferior to those of another power.

Since Roosevelt, every president has held that the United States cannot allow another country to gain an advantage in overall nuclear capability. (In Roosevelt’s case, that country was Hitler’s Germany.) This shared stance is clear in the following statements (*italics added*):

- *Truman*: “as long as an international agreement for the control of atomic energy could not be reached, our country had to be *ahead of any possible competitor*. . . . as long as we had the lead in atomic developments, that great force would help us keep the peace.”⁷⁷
- *Eisenhower*: “The power of [nuclear] weapons to deter aggression and to guard world peace would be lost if we failed to hold our *superiority* in these weapons. And the importance of our strength in this particular weapons-field is sharply accented by the unavoidable fact of our numerical inferiority to Communist manpower.”⁷⁸
- *Kennedy*: “we have many times more nuclear power than any other nation on earth. . . . It is essential to the defense of the Free World that we maintain this

relative position. ...it will be the policy of the United States to proceed in developing nuclear weapons to maintain this *superior capability* for the defense of the Free World against any aggressor.”⁷⁹

- *Johnson*: “the focus of our national effort has been on assuring *an indisputable margin of superiority* for our defenses. ...that effort has succeeded. Our strategic nuclear power on alert has increased three-fold in four years [1961-1965]. Our tactical nuclear power has been greatly expanded. ...To maintain our superiority, the immediate future will see further increases in our missile strength, as well as concentration on further technological improvements and continuing vigorous Research and Development [for strategic forces].”⁸⁰
- *Nixon*: “Our policy [is] to maintain strategic sufficiency [which] has two meanings. In its narrow military sense, it means enough force to inflict a level of damage on a potential aggressor sufficient to deter him from attacking. [“That makes it imperative *that our strategic power not be inferior to that of any other state.*”] ...In its broader political sense, sufficiency means the maintenance of forces adequate to prevent us or our allies from being coerced. ...But sufficiency also means...forces which the Soviet Union cannot reasonably interpret as being intended to threaten a disarming attack.”⁸¹
- *Ford*: “To ensure the credibility and strength of our military deterrent across the full spectrum of potential conflict, [one of] our overriding aims must be to maintain... [a] *strategic balance that guarantees the United States will never be in an inferior position.*”⁸²
- *Carter*: “In its balanced strategic nuclear capability, the United States retains important advantages. But over the past decade, the steady Soviet buildup has achieved functional equivalence in strategic forces with the United States. ...Our strategic forces must be—and must be known to be—a match for the capabilities of the Soviets.” “...the United States will *maintain strategic nuclear equivalence* with the Soviet Union.”⁸³
- *Reagan*: “The modernization of our strategic nuclear forces and the achievement of *parity* with the Soviet Union shall receive first priority in our efforts to rebuild the military capabilities of the United States.”⁸⁴
- *George H.W. Bush*: “we sought a [Strategic Arms Reduction] Treaty that would allow *equality of U.S. forces* relative to those of the Soviet Union. ...the emphasis is to reach equality in order that the resulting levels will be stabilizing. Equality does not require identical force structures; rather it demands limits that allow the Parties to have equivalent capabilities.”⁸⁵
- *Clinton*: “We will retain a strategic nuclear force 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.*”⁸⁶

- *George W. Bush:* “[One force-sizing criterion is] an assurance-related requirement for U.S. nuclear forces that they be judged *second to none*” (statement by Secretary of Defense Donald Rumsfeld).⁸⁷

Over the period in which these eleven presidents have served, the United States has gone from nuclear monopoly (until 1949) to superiority (through the mid-1960s) to parity (since the late 1960s) in relation to the other ranking nuclear power, the Soviet Union/Russia. These shifts in strategic status, evident in the changing benchmarks highlighted above, resulted from increases in the size and survivability of Moscow’s nuclear forces, along with decisions in Washington not to sustain a U.S. edge. Within these shifts, the meanings of “superiority” and “parity” have varied. In the course of its two-decade run, “superiority” had connotations that were quantitative—more bombers, more missiles, more warheads—as well as qualitative—the ability to eliminate much of the opposing nuclear force and thereby reduce significantly the destruction an enemy attack could cause. “Parity,” in its ongoing era, also has been defined in terms of both comparability in numbers (delivery vehicles, warheads, equivalent megatons, missile throw-weight, hard-target-kill potential, and the like) and in the capability to destroy an opponent’s society. The Nixon, Ford, and Carter administrations attached importance not only to the objective measures of the nuclear balance, but also to how that balance was *perceived* in key foreign capitals, arguing that these perceptions were relevant to whether friends felt secure, foes were deterred, and others inclined toward the United States or its adversaries.⁸⁸ Despite the shifts in the nuclear balance and the variety of formulations used by presidents to define the nuclear position required for the United States, all administrations have called for at least parity with the nearest nuclear rival. The concomitant has been U.S. superiority in a quantitative, if not qualitative, sense with regard to the rest of the nuclear-armed states. In short, presidents have said that the United States must either have a nuclear advantage itself or deny such an advantage to its competitors. A condition of U.S. inferiority, however defined, always has been deemed unacceptable.

The “second to none” yardstick of the George W. Bush administration is in keeping with this tradition. (Indeed, in the 1960 presidential campaign, then-Senator John Kennedy urged that, “We must make invulnerable a nuclear retaliatory power second to none.”)⁸⁹ Although the specific measures associated with the Bush standard have never been disclosed, the president did set a goal of 1,700-2,200 operationally deployed strategic nuclear warheads (ODSNWs) by 2012⁹⁰ (down from some 6,000 warheads at the start of his tenure),⁹¹ and this warhead level subsequently was codified for both the United States and Russia in the 2002 Moscow Treaty. At the end of 2007, the United States had somewhat less than 2,900 ODSNWs,⁹² while Russia had roughly 2,600. It remains to be seen whether the United States will match whatever number Russia selects within the 1,700-2,200 range or accept some disparity favoring Moscow.⁹³ (START II, an earlier arms agreement supported by President George H.W. Bush and President Clinton but

never entered into force, also established a range—3,000-3,500—for the number of warheads deployed by each country.)

The policy that the United States must have parity or better has coexisted with presidential beliefs that, after a certain point, the nuclear advantage of one side or the other would make little difference in the event of war, that pursuit of an advantage could be counterproductive, and that negotiated restrictions on, and reductions in, nuclear forces are necessary. Nevertheless, “superiority” or “parity,” particularly in numerical terms, has remained the desideratum and “inferiority” the danger. There have been at least three reasons for this. First, concern by presidents and their advisers that a nuclear imbalance unfavorable to the United States could encourage aggression by an opponent, even if the limits of superiority were apparent to U.S. officials. Second, unease that allies might be unsettled by such an imbalance and rendered less sure of U.S. leadership. And third, worry that ceding an advantage to an adversary could have adverse political repercussions at home as well as abroad.

Regarding the last point, a number of examples suggest a political aversion to second place that reinforces the strategic motives for ensuring at least nuclear parity. The bomber and missile “gaps” of the Eisenhower years and the “window of vulnerability” during the Carter administration were not only strategic issues, but also matters of political controversy (and anxiety) about whether the Soviet Union was overtaking the United States in the arms competition. After the debates on the 1972 Strategic Arms Limitation Treaty (SALT I) and the 1993 START II agreement, Congress passed resolutions requiring that the “levels of intercontinental strategic forces” for the United States would not be “inferior” to those of the Soviet Union (SALT I joint resolution of approval)⁹⁴ and that the “accountable warheads” of the Russian Federation “in no case [would exceed] the comparable number of accountable warheads possessed by the United States to an extent that a strategic imbalance endangering the national security interests of the United States results” (START II Senate resolution of ratification).⁹⁵ When, in the last years of the Clinton administration, the Cox Committee report⁹⁶ and the Wen Ho Lee case⁹⁷ raised questions about the extent to which espionage had enabled China to improve its nuclear arsenal at the expense of the United States, a cabinet officer was quick to offer the assurance that “the United States still maintains an overwhelming nuclear weapons superiority; we have some 6,000 strategic nuclear warheads whereas China has less than two dozen strategic missiles.”⁹⁸ Nuclear advantage appears to matter, even if many believe the catastrophic nature of nuclear war argues otherwise. Political leaders and the public may accept not being ahead, but are loath to fall behind.

7. Nuclear forces support security commitments to defend key allies.

The U.S. nuclear arsenal has never defended the United States alone. “Nuclear guarantees,” constituting the “nuclear umbrella,” always have been extended to protect others (thus the term “extended deterrence”). As the Nuclear Posture Review of the Clinton administration affirmed, “the United States has not only a national deterrent posture, but an international nuclear posture.”⁹⁹ A high-level State Department advisory

group recently determined that through a web of treaties and other security ties “[s]ome 30 nations now depend on the United States for protection against nuclear weapons.”¹⁰⁰

In the early years of the Cold War, before the Soviet Union gained the ability to deliver a nuclear attack against the United States, the chief purpose of the nuclear-armed Strategic Air Command (SAC) was to defend Western Europe against Soviet conventional or nuclear aggression.¹⁰¹ In subsequent years, the abiding commitment to NATO was an important determinant of all aspects of the U.S. nuclear posture—strategy, plans, forces, and deployments. Preservation of U.S. superiority in nuclear arms was long thought necessary to counterbalance the larger conventional forces the Soviets and their satellites could mass against the Western alliance. To maintain the defense of NATO after the loss of nuclear superiority, the United States gradually incorporated into its war plans an increasing number of nuclear attack options that, by limiting the scope and scale of U.S. retaliation, were intended to bolster the credibility of deterrent threats made on behalf of the allies. A variety of U.S. nonstrategic nuclear forces were deployed in NATO countries, not only to provide local firepower for breaking up a Warsaw Pact offensive, but to create a tangible link between NATO-Europe and the U.S. strategic nuclear forces based outside the continent; this was the primary reason for the deployment of U.S. ground-launched cruise missiles and intermediate-range ballistic missiles in Western Europe during the 1980s. In addition to the U.S. nuclear forces in Europe, a portion of the warheads on U.S. nuclear-powered ballistic missile submarines (SSBNs) were specifically designated for NATO use, an allocation repeatedly approved at the White House level.¹⁰² As part of its nuclear guarantee, the United States also brought the NATO allies into its planning for the employment of nuclear weapons.

Though its origins are in the Cold War, the U.S. nuclear commitment to NATO remains in force and valued. The latest NATO Strategic Concept, adopted by the United States and other alliance members a decade after the Berlin Wall fell, defines continuing requirements for nonstrategic and strategic nuclear forces.¹⁰³ The Strategic Concept, which outlines guidance for the development of NATO policies and military plans, cites a number of dangers that could emerge from the uncertain evolution and political instability of the post-Cold War security environment. These include a renewed threat of large-scale conventional aggression, an escalating peripheral conflict into which NATO countries might be drawn, and nuclear arms or other weapons of mass destruction in the hands of hostile states. Both conventional and nuclear forces, according to the guidance, are needed to meet such dangers and prevent coercion or attack. “Nuclear weapons,” says the document, “make a unique contribution in rendering the risks of aggression against the Alliance incalculable and unacceptable. Thus, they remain essential to preserve peace.” U.S. strategic forces are characterized as part of “the supreme guarantee of the security of the Allies.” And European-based nonstrategic nuclear forces “provide an essential link with strategic nuclear forces, reinforcing the transatlantic link.” While the nuclear commitment to NATO remains, albeit with modifications, the related nuclear capabilities are significantly diminished. The nonstrategic nuclear weapons for the defense of NATO have been reduced by 90 percent since the end of the Cold War and are now limited to “a few hundred” bombs for dual-capable strike aircraft. (Some number of

sea-launched cruise missiles carried by attack submarines also could be made available for this purpose.)¹⁰⁴

Countries in East Asia, including Japan and South Korea, also have been covered by the U.S. nuclear umbrella. Japan and South Korea have been formally allied with the United States since the early 1950s. U.S. nuclear guarantees are part of these bilateral alliances. In line with the commitment to Seoul, the United States based nuclear weapons in South Korea from the Eisenhower administration until the George H.W. Bush administration, when they were removed under the September 1991 Presidential Nuclear Initiative.¹⁰⁵ Since the withdrawal, the guarantee has been backed by other U.S. nuclear forces.

The long-standing nuclear commitments to South Korea and Japan came to the fore in late 2006, after North Korea's detonation of a nuclear device created grave apprehension in Seoul and Tokyo. Hours after the October 9 test, the president announced from the White House that he "had affirmed to our allies in the region, including South Korea and Japan, that the United States will meet the full range of our deterrent and security commitments."¹⁰⁶ Less than two weeks later, the secretary of state traveled to Tokyo and, with the Japanese foreign minister at her side, told the press, "I reaffirmed the President's statement of October 9th that the United States has the will and capability to meet the full range—and I underscore full range—of its deterrent and security commitments to Japan."¹⁰⁷ Shortly afterward, the secretary of defense met in Washington with his South Korean counterpart and "offered assurances of firm U.S. commitment and immediate support to the ROK [Republic of Korea], including continuation of the extended deterrence offered by the U.S. nuclear umbrella, consistent with the Mutual Defense Treaty."¹⁰⁸ The same nuclear commitment emphasized in these Bush administration statements was expressed more vividly by President Clinton during the earlier years of the persistent security challenge posed by North Korea's pursuit of nuclear weapons. Standing at the Demilitarized Zone in July 1993, the president explained to reporters—and other interested parties—that Pyongyang's nuclear ambition "doesn't make any sense. When you examine the nature of the American security commitments to Korea, to Japan, to this region, it is pointless for them to try to develop nuclear weapons, because if they ever use them it would be the end of their country. All they have to do is read our security agreements."¹⁰⁹

In the George W. Bush administration, assuring NATO, Japan, South Korea, and other allies of the solidity of American security commitments has been set as one of the main objectives for U.S. nuclear forces. (The others are dissuading adversaries from competing militarily with the United States, deterring coercion or attack against the United States and its security partners, and defeating an enemy while defending the United States, allies, and friends.) The requirement to assure allies is one reason for the force level of 1,700-2,200 ODSNWs. This level is thought sufficient to maintain parity with Russia, the other leading nuclear state, and avoid an inferior position that allies might find troubling. (In addition to the needs of assurance, the size of the nuclear arsenal reflects "the force structure needed to provide options to halt the [ongoing nuclear] drawdown or to allow the redeployment of warheads to enforce the goals of deterrence and dissuasion; the number and types of targets to be held at risk for

deterrence; and the forces needed to defeat adversaries across a spectrum of conflicts and scenarios.”)¹¹⁰

U.S. nuclear guarantees have been intended to discourage proliferation, by assuring allies and friends, as well as to deter aggression. As long ago as the Johnson administration, security guarantees were recognized for their potential to combat proliferation. In November 1964, less than a month after the first Chinese nuclear test, President Johnson established the Committee on Nuclear Proliferation to advise him on ways of preventing the spread of nuclear weapons. The group was chaired by Roswell Gilpatric, deputy secretary of defense in the Kennedy administration, and included individuals with government, legal, business, and scientific backgrounds. (Two members, Herbert York and George Kistiakowsky, became prominent arms control advocates.) In its January 1965 report, the Gilpatric Committee recommended, among other things, a “credible assurance of United States action in the event of a nuclear attack on India in exchange for an Indian commitment not to acquire nuclear weapons,” a reaffirmation of the U.S. defense commitment to Japan, and an effort by the Defense Department to consider “the development of any weapons systems necessary to back our commitments to nations electing not to develop their own nuclear weapons.”¹¹¹ In a presentation made during the deliberations of the committee, Secretary of Defense Robert McNamara said he was “willing to pay a substantial price” to limit proliferation, including the provision of security guarantees to countries contemplating nuclear arsenals of their own.¹¹²

Since the Gilpatric Committee, officials in a number of administrations have pointed to the value of extended deterrence in stemming proliferation. President Nixon’s secretary of defense, James Schlesinger, observed that “one element affecting [the] extent and velocity [of nuclear proliferation] is the degree to which other countries believe that the U.S. strategic deterrent continues—or fails—to protect them.”¹¹³ Harold Brown, defense secretary in the Carter administration, likewise cautioned that “[t]he loss of confidence in the U.S. nuclear deterrent could, as one extreme result, lead to heightened and accelerated efforts by other nations to acquire nuclear capabilities of their own.”¹¹⁴ Walter Slocombe, under secretary of defense for policy in the Clinton administration, called the U.S. nuclear umbrella “an important nonproliferation tool,” explaining,

[i]t has removed incentives for key allies in a still dangerous world to develop and deploy their own nuclear forces, as many are quite capable of doing from a technical point of view. Indeed, our strong security relationships have probably played as great a role in nonproliferation over the past 40 years as the NPT [Non-Proliferation Treaty] or any other single factor.¹¹⁵

The George W. Bush administration has taken a similar position. In July 2007, the secretaries of state, defense, and energy issued a rare joint statement that described the relationship between the national security policy and nuclear weapons of the United States, including the contribution to nonproliferation:

We seek to assure allies that the U.S. nuclear arsenal continues to serve as the ultimate guarantor of their security, thus obviating any need for them to develop

nuclear weapons of their own. ...Credible U.S. nuclear capabilities and our security commitment to allies remain an indispensable part of deterrence and an important element in our effort to limit proliferation.¹¹⁶

These past and present assertions of the anti-proliferation effect of extended deterrence appear to have empirical merit. Reviews of proliferation case studies offer evidence that U.S. guarantees have contributed to decisions by Germany, Japan, South Korea, Taiwan, Turkey, Saudi Arabia, Australia, Italy, and Norway to forgo nuclear weapons programs.¹¹⁷ In this same vein, a recent congressional study, based in part on interviews with foreign officials and observers, concluded that whether the governments in Riyadh and Ankara decided to seek nuclear weapons in response to an Iranian bomb would depend largely on the perceived strength of U.S. security guarantees. In the case of Turkey, staff from the office of Senator Richard Lugar held a closed meeting with “influential Turkish politicians” and asked

how Turkey would respond to an Iranian acquisition of nuclear weapons. These politicians emphatically responded that Turkey would pursue nuclear weapons as well. These individuals stated, “Turkey would lose its importance in the region if Iran has nuclear weapons and Turkey does not.” Another politician said it would be “compulsory” for Turkey to obtain nuclear weapons in such a scenario. However, when staff subsequently asked whether a U.S. nuclear umbrella and robust security commitment would be sufficient to dissuade Turkey from pursuing nuclear weapons, all three individuals agreed that it would.¹¹⁸

Despite the risks nuclear guarantees entail, every administration of the last 60 years has supported extended deterrence as a means of protecting allies and limiting proliferation.

8. The option to use nuclear weapons first should be retained.

Periodically it is proposed that the United States pledge not to be the first to use nuclear weapons in a future conflict.¹¹⁹ Proponents maintain that such a pledge would reinforce the “firebreak” against nuclear use, reduce reliance on nuclear weapons, encourage the development of nonnuclear alternatives, diminish political tensions, and set an example that would aid nonproliferation efforts. These claims are not evaluated here. What is shown is the unwillingness of the present and prior administrations to renounce the option of using nuclear weapons first. The enduring reluctance to foreclose the first-use option in a sense is a derivative continuity that reflects the previously described role nuclear weapons have played in strategies for countering nonnuclear aggression (conventional offensives, chemical strikes, and biological attacks). It also reflects high-level interest in preserving the ability to preempt an imminent WMD attack, if not to take preventive action to disarm an adversary of its weapons of mass destruction.

In the early 1960s, at a time of “ban the bomb” protests and initiatives, the Kennedy administration opposed a United Nations (UN) resolution aimed at prohibiting nuclear use, on the grounds that it infringed on the right of self-defense (protected by the UN

charter) and was incompatible with the nuclear guarantees that defended U.S. allies.¹²⁰ In the early 1970s, during the initial strategic arms limitation talks, the Soviets raised the possibility of a mutual no-first-use declaration, which the Nixon administration rejected, again because of U.S. alliance commitments.¹²¹ In the mid-1970s, Ford administration officials testified that no-first-use legislation then in Congress “could undercut [U.S.] commitments to [nonnuclear] Allies, thus raising concern about their security, and thereby increasing their incentives to acquire independent nuclear weapons capabilities.” Other states, the officials went on, would be unlikely to renounce nuclear weapons on the basis of a U.S. no-first-use policy.¹²² During the 1979 Vienna summit, President Carter found no-first-use unacceptable because he “did not want to encourage an attack by promising the Soviets that a European war would be fought on their terms.”¹²³ In the early 1980s, when no-first-use attracted an assortment of advocates that included Soviet leaders, former U.S. officials, and American Catholic bishops, the Reagan administration disagreed, arguing that the proposed ban would make a Warsaw Pact conventional attack less risky and therefore more likely, give a major impetus to proliferation among countries then covered by the U.S. nuclear umbrella, and tie the United States to a pact that was unverifiable. Reagan officials, and their allied counterparts, instead favored international acceptance of the NATO and UN principle of no use of any force, conventional or nuclear, except to deter or defeat aggression.¹²⁴ In the late 1990s, well after the Soviet collapse, the Clinton administration rebuffed a suggestion by the German foreign minister (a leader of the anti-nuclear Green Party) that NATO take the no-first-use pledge.¹²⁵ In his criticism, Secretary of Defense Cohen contended that

the ambiguity involved in the issue of the use of nuclear weapons contributes to our own security, keeping any potential adversary who might use either chemicals or biologicals unsure of what our response would be. So we think [NATO has] a sound doctrine. It was adopted certainly during the Cold War, but modified...and reaffirmed following...the end of the Cold War. It is an integral part of our strategic concept and we think it should remain exactly as it is.¹²⁶

President Clinton himself issued guidance for the employment of nuclear weapons that reserved the right to use nuclear weapons first.¹²⁷ For more than four decades, then, no-first-use has been regarded as a policy unsuitable for the United States and its allies.

At the same time, the United States has placed limits on its first-use option, although how stringent they are is unclear. In addition to the nuclear guarantees extended to allies, the United States has provided “negative security assurances” by which it promises, with certain exceptions, not to resort to nuclear use against nonnuclear states. (“Positive security assurances” are pledges to aid nonnuclear states that are targets of nuclear intimidation or attack.) Like nuclear guarantees, negative security assurances are intended to discourage proliferation by limiting the threats nonnuclear countries face. At the 1978 UN Special Session on Disarmament, Secretary of State Cyrus Vance, on behalf of President Carter, declared that,

The United States will not use nuclear weapons against any non-nuclear weapons state party to the NPT or any comparable internationally binding commitment not to

acquire nuclear explosive devices, except in the case of an attack on the United States, its territories or armed forces, or its allies, by such a state allied to a nuclear-weapons state or associated with a nuclear-weapons state in carrying out or sustaining the attack.¹²⁸

The exception was meant to exempt the U.S. commitment to use nuclear weapons, if necessary, to defend NATO against a large-scale Warsaw Pact conventional attack (which would include the forces of nonnuclear East European countries allied with the Soviet Union, a nuclear weapon state) and protect South Korea against similar aggression by the communist North (which had military alliances with the Soviet Union and nuclear-armed China).

In 1995, the Clinton administration restated the U.S. negative security assurance in order to gain the support of nonnuclear states for an indefinite extension of the NPT. Through his secretary of state, President Clinton gave this assurance to the NPT Review and Extension Conference:

The United States reaffirms that it will not use nuclear weapons against any non-nuclear weapon [NPT parties] except in the case of an invasion or any other attack on the United States, its territories, its armed forces or other troops, its allies, or on a State towards which it has a security commitment, carried out or sustained by such a non-nuclear-weapon State in association or alliance with a nuclear-weapon State.¹²⁹

The restatement of the assurance seemingly made the exception more restricted. Alliance with a nuclear state alone would not be sufficient to permit nuclear use against a nonnuclear state that attacked the United States or an ally. Instead, aggression by the nonnuclear state would have to involve the participation of the nuclear state with which the nonnuclear state was aligned.

Later statements by Clinton administration officials, however, raised questions about the extent to which the United States was constrained from nuclear use in response to certain nonnuclear attacks. In early 1996, the United States signed a protocol to the African Nuclear-Weapon-Free-Zone (ANWFZ) Treaty in which it pledged not to use or threaten to use nuclear weapons against parties to the agreement. As the ink dried, the senior director for defense policy and arms control on the National Security Council (NSC) staff announced that the protocol “will not limit options available to the United States in response to an attack by an AN[W]FZ party using weapons of mass destruction.”¹³⁰ (At the time, the United States was concerned about the chemical weapons capabilities of Libya, a hostile country that was a signatory to both the ANWFZ Treaty and the NPT.)¹³¹ The option of nuclear use was said to be justified on the basis of “belligerent reprisal,” a rule of international law under which the illegal action of an aggressor permits the victim to carry out, within limits, retaliation otherwise contrary to its international obligations. Chemical or biological use would violate the 1925 Geneva Protocol, a treaty included in the customary international law applicable to all countries, thus giving the United States

license to respond in a way at odds with its negative security assurances. Moreover, the negative security assurances were considered politically rather than legally binding.¹³²

Two weeks after the United States acceded to the ANWFZ Treaty protocol, Secretary of Defense Perry warned that “if some nation were to attack the United States with chemical weapons, then they would have to fear the consequences of a response from any weapon in our inventory. . . . we could make a devastating response without the use of nuclear weapons, but we would not forswear that possibility.”¹³³ The next year, administration representatives explained that a new presidential directive on nuclear weapons policy did not exclude nuclear retaliation for a chemical or biological attack.¹³⁴ According to one, the United States reserved the right to use nuclear weapons first against an opponent that “was not a state in good standing under the Non-Proliferation Treaty or an equivalent international convention.”¹³⁵ It was, he said, “not difficult to define a scenario in which a rogue state would use chemical weapons or biological weapons and not be afforded protection under our negative security assurance.”¹³⁶ A few months later, in early 1998, an assistant secretary of state, after denying Russian reports of U.S. plans to use nuclear weapons against Iraq, added, “We have worked hard to fashion non-nuclear responses to the threat or use of weapons of mass destruction in order to give military commanders and the president a range of options from which to choose. . . . Nevertheless, we do not rule out in advance any capability available to us [in] a situation in which the US, our allies and our forces have been attacked with chemical or biological weapons.”¹³⁷ In the last year of the Clinton administration, an unnamed “senior official” told a reporter, “It doesn’t really matter what your policy is. In the real world, you’re going to do what you have to do.”¹³⁸

A similar position was taken by a ranking Bush administration official in 2002, though on the record. During an interview, John Bolton, the under secretary of state for arms control and international security, characterized negative security assurances as reflecting “an unrealistic view of the international situation,” and said, “[w]e are just not into theoretical assertions that other administrations have made.” If the United States were attacked, “we would have to do what is appropriate under the circumstances, and the classic formulation of that is, we are not ruling anything in and we are not ruling anything out.” The objective, Bolton emphasized, was to “create a situation where nobody uses weapons of mass destruction of any kind.”¹³⁹ After questions were raised about these comments, the State Department publicly reaffirmed every word of the Clinton administration’s 1995 pledge, cited the threats made by the George H.W. Bush administration before the 1991 Gulf war, and referred to Secretary Perry’s 1996 statement. The intent was to demonstrate continuity with the past: “This has been a very consistent policy of 20 or 30 years. . . . there is no change.” And, consistent with statements made during the Clinton administration, the State Department also noted that, “the policy says that we will do whatever is necessary to deter the use of weapons of mass destruction against the United States, its allies and its interests. If a weapon of mass destruction is used against the United States or its allies, we will not rule out any specific type of military response.”¹⁴⁰

In short, the negative security assurance first offered by the Carter administration has been made elastic by the Clinton and George W. Bush administrations in order to accommodate the competing demands of discouraging nuclear proliferation and deterring chemical or biological attack. The result has been preservation of the first-use option in the event of attack.

In addition to the presumed value of nuclear weapons for deterring or responding to nonnuclear aggression, the United States has retained the option of first use to forestall a WMD attack. In the initial years of the Cold War there was some high-level consideration of preventive nuclear war to head off Soviet acquisition of atomic and, later, thermonuclear capabilities, but these discussions never led to concrete military preparations toward that end.¹⁴¹ U.S. nuclear war plans between the early 1950s and at least the late 1970s did, however, include preemptive options to strike at, among other targets, the nuclear forces of the enemy (the Soviet Union or China). The open record reveals that preemptive as well as retaliatory alternatives were incorporated in the Single Integrated Operational Plan (SIOP) from its first version, SIOP-62, which came into effect at the start of the Kennedy administration, to one of its several subsequent revisions, SIOP-5D, which was approved during President Carter's term.¹⁴² The planned preemptive strikes were designed to neutralize opposing nuclear missiles and bombers before they could be launched against the United States and its allies. (In the 1950s, when the United States was dependent on bombers to carry out long-range nuclear attacks, it also was important to send these aircraft aloft before their bases were hit.) Had there been strategic warning of an imminent nuclear attack, the president could have ordered nuclear preemption. Warning of such an attack probably would have occurred in the context of an intense crisis or an ongoing conventional war. Warning indicators might have included heightened alert for enemy nuclear forces and strategic defenses, movement of forces, relocation of leadership elements to wartime command posts, evacuation of urban areas, and certain types of communications (alert orders, status reports, intelligence updates, plan changes)—some potentially vulnerable to intercept by U.S. intelligence-gathering capabilities.¹⁴³ In late 1980, Secretary of Defense Brown was asked in a closed Senate hearing on nuclear strategy whether the United States had a plan to deal with a situation where “our intelligence, for instance, gave us 100-percent assurance that there was an intended strike on us unless we did something about it.” Brown replied, “There are options that cover that situation.”¹⁴⁴ (The rest of his answer was deleted from the declassified transcript.)

It was improbable, of course, that warning of an attack would ever be “100-percent” sure, and this reality raised the serious danger of false preemption and nuclear war by error. Moreover, it also was unlikely that the United States could execute a disarming attack that would leave the enemy with no residual nuclear forces with which to retaliate. As a consequence, presidents have shown little enthusiasm for preemptive nuclear options, even in the period when the nuclear power of the United States was at its peak. When President Eisenhower “contemplated a failure of deterrence, a rapid, perhaps pre-emptive counter-force strike to minimize the damage inflicted on the United States and its allies seemed to be the least bad of the range of horrific measures.”¹⁴⁵ President Kennedy concluded that “preemption was not possible for us” after hearing a highly classified

NSC briefing that projected the United States would suffer tens of millions of casualties in a nuclear war even if it struck first.¹⁴⁶ Nonetheless, as noted, preemptive options remained in the SIOP well into the 1970s, if not later.

In more recent years, the matter of preemption has arisen in the context of increased concern about the threats posed by WMD proliferation. In 1997, in explaining U.S. negative security assurances and the conditions under which the United States might resort to nuclear use, a senior Clinton administration official said that, “if a state that we are engaged in conflict with is a nuclear-capable state, we do not necessarily intend to wait until that state uses nuclear weapons first—we reserve the right to use nuclear weapons first in a conflict whether its [sic] CW [chemical weapons], BW [biological weapons] or for that matter conventional [weapons].”¹⁴⁷ In the George W. Bush administration, preemption has been described as one of a number of counterproliferation tools. This point is made in key strategy documents: *National Security Strategy of the United States of America* (2006), *National Defense Strategy* (2008), and *The National Military Strategy of the United States of America* (2004).¹⁴⁸ *National Security Strategy* holds that “[i]f necessary, . . . under long-standing principles of self-defense, we do not rule out the use of force before attacks occur, even if uncertainty remains as to the time and place of the enemy’s attack. When the consequences of an attack with WMD are potentially so devastating, we cannot afford to stand idly by as grave dangers materialize. This is the principle and logic of preemption.”¹⁴⁹ “Preemption” as used by the Bush administration appears to encompass preventive attacks to stop or roll back WMD acquisition as well as attacks that anticipate impending WMD use (the latter falling under the standard definition of “preemption”).¹⁵⁰ It also is important to recognize that the Bush “principle of preemption” does not explicitly refer to the use of nuclear weapons for this purpose. But by the same token, nuclear use is not expressly excluded. Whether the ambiguity is calculated or unintentional is unclear on the basis of public sources.

In sum, presidents have kept the first-use option for three reasons: to maintain defense commitments to allies, to deter nonnuclear aggression (particularly chemical or biological use), and to preempt WMD attack.

9. A minimum deterrence force is inadequate to meet defense requirements.

A “minimum deterrence” force, according to proponents, would inhibit attack by threatening nuclear retaliatory strikes against some number of the would-be aggressor’s urban-industrial centers and those targets alone. For deterring the Soviet Union, the oft-cited benchmark was 200 cities, the destruction of which was calculated to require delivery of a few hundred nuclear warheads by a fleet of ballistic missile submarines or other highly survivable force. Because the requisite numbers of targets and warheads essentially are fixed, this alternative also has been called a “finite deterrence” force, as opposed to a force that increases in response to growth in the number of military or other targets or to vulnerabilities imposed by improvements in enemy capabilities.

In the late 1950s and early 1960s, minimum deterrence was advocated by the Navy, with the support of the Army. The deployment of the first submarine-launched ballistic missiles (SLBMs), which were better suited to counter-city than counter-military attacks, was presented as an opportunity to move away from existing plans and forces for striking a few thousand enemy installations, including those for military forces, with a comparable number of bomber and missile weapons. The threat to a specific number of cities was asserted to be an adequate deterrent; no careful effort was made to look at matters from the Soviet perspective or to examine a minimum deterrence force across the range of contingencies in which nuclear weapons might come into play. The advantages claimed for minimum deterrence were cost savings, avoidance of excessive destruction (“overkill”), and a slowdown in the “arms race” (because the United States would not need to react to changes in Soviet nuclear forces and those forces would not face the threat of U.S. strikes.)¹⁵¹ This strategic logic was not, however, the sole or even primary motive for Navy and Army support of minimum deterrence. Histories by the Office of the Secretary of Defense, as well as other accounts, make clear that the two services saw minimum deterrence as a means of shifting defense dollars away from the Air Force and preparations for nuclear war and into their own programs and forces for conventional conflict.¹⁵²

Not surprisingly, the SAC-dominated Air Force opposed minimum deterrence. Representatives of the service and others made several arguments against the proposal. A minimum deterrence force in general would be less resilient and flexible than one that was larger and more diversified. Such a small force could be considerably more vulnerable to disarming attacks or defensive measures, for example, which could introduce greater instability into the nuclear balance. If both sides had minimum deterrence forces, covert force deployments and the danger of surprise would be of greater consequence. Without forces capable of striking at enemy nuclear forces, the ability to limit damage through offensive operations would be lost. Threats to destroy the enemy’s cities in response to attacks on allies would be less credible than threats against opposing nuclear and other military forces, thus undermining extended deterrence commitments. If nuclear forces no longer served as a crutch for conventional weaknesses, greater investment in nonnuclear capabilities would be needed, offsetting the savings from the move to minimum deterrence. And, some argued, deliberately targeting cities, as opposed to causing noncombatant harm as an unintended consequence of strikes on other targets, was morally and, under the law of armed conflict, legally wrong.¹⁵³

The Eisenhower administration sided with the Air Force and rejected minimum deterrence. Then-Secretary of Defense Thomas Gates told a congressional committee that

in order to maintain a valid deterrent we have to maintain a deterrent force capable of knocking out [the enemy’s] military power and not just bombing his cities. What we would actually do depends on circumstances, but we are adjusting our power to a counterforce theory; or a mixture of a counterforce theory plus attacks on industrial centers and things of that character. We are not basing our requirement on just bombing Russia for retaliation purposes.¹⁵⁴

Although President Eisenhower at times expressed concern about “overkill” (once asking, “How many times do we have to destroy Russia?”),¹⁵⁵ he approved an “optimum mix” of some 2,000 military and urban-industrial targets that included enemy bomber bases, ICBM sites, control centers, nuclear weapons facilities, and air defense bases, as well as targets located in urban areas.¹⁵⁶ Eisenhower maintained a bomber force of well over 1,000 aircraft, to which initial deployments of land- and sea-based ballistic missiles were added. At the time he left office, the strategic force, when fully generated, was capable of delivering more than ten times the number of nuclear weapons associated with minimum deterrence.¹⁵⁷

Like his predecessor, President Kennedy sometimes questioned whether the United States was “get[ting] into the overkill business.”¹⁵⁸ Yet his administration, too, did not accept minimum deterrence. Instead, in the tense international conditions of the early 1960s, Kennedy accelerated the buildup in U.S. nuclear arms.¹⁵⁹ His secretary of defense, Robert McNamara, called minimum deterrence an “extreme” posture. (“Full first strike capability” received the same label.) In a memorandum to the president, McNamara rejected minimum deterrence on two of the grounds mentioned above: lack of an ability to limit damage in the event of war and insufficient capability for a credible threat to deter Soviet aggression against allies.¹⁶⁰

Though McNamara later would emphasize the ability of U.S. strategic forces to survive a first strike and carry out a retaliatory attack that could destroy 20-30 percent of the population and 50-70 percent of the industry of the Soviet Union, this did not indicate acceptance of a minimum deterrence posture. Even after giving prominence to this “assured destruction” capability, McNamara characterized a “cities only” strategy as “dangerously inadequate.”¹⁶¹ Throughout his long tenure, a large force of bombers and missiles with thousands of nuclear warheads remained deployed and war plans that included damage-limiting strikes against Soviet nuclear capabilities remained in effect. McNamara used the assured destruction percentages as a budget cudgel to limit requests for additional nuclear forces, arguing that, at those levels of lethality, the United States already was on the “flat of the curve” and more weapons would yield only marginal increases in retaliatory damage. (As with minimum deterrence, the deterrent effect of assured destruction was asserted, not assessed through analysis of the motivations and views of Soviet leaders.)¹⁶² One of McNamara’s deputies has recalled that assured destruction “provided a basis for denying service and Congressional claims for more money for strategic forces [and] served the purpose of dramatizing for the Congress and the public the awful consequences of large-scale nuclear war and its inappropriateness as an instrument of policy. (However, it was never proposed by McNamara or his staff that nuclear weapons actually be *used* in this way.)”¹⁶³

Subsequent administrations likewise would find minimum deterrence unacceptable. President Nixon warned,

I must not be—and my successors must not be—limited to the indiscriminate mass destruction of enemy civilians as the sole possible response to challenges. This is

especially so when that response involves the likelihood of triggering nuclear attacks on our own population. It would be inconsistent with the political meaning of [strategic] sufficiency to base our force planning solely on some finite—and theoretical—capacity to inflict casualties presumed to be unacceptable to the other side.¹⁶⁴

Nixon also worried that if U.S. nuclear capabilities were reduced to a minimum deterrence force, “the Soviets might well seize the opportunity to step up their programs and achieve a significant margin of strategic superiority” and the allies would lose confidence in U.S. nuclear guarantees.¹⁶⁵

The Reagan administration objected to minimum deterrence as “neither moral nor prudent.” Caspar Weinberger, Reagan’s first secretary of defense, registered the administration’s strong disagreement “with those who hold that deterrence should be based on nuclear weapons designed to destroy cities rather than military targets.” He went on to explain that,

Deliberately designing weapons aimed at populations is neither necessary nor sufficient for deterrence. If we are forced to retaliate and can only respond by destroying population centers, we invite the destruction of our own population. Such a deterrent strategy is hardly likely to carry conviction as a deterrent, particularly as a deterrent to nuclear—let alone conventional—attack on an ally. ...To talk of actions that the U.S. Government could not, in good conscience, and in prudence, undertake tends to defeat the goal of deterrence.¹⁶⁶

Rather than a minimum deterrence force, the United States “need[ed] to be able to use [nuclear] force responsibly and discriminately, in a manner appropriate to the nature of [a Soviet] nuclear attack.”¹⁶⁷

In the post-Cold War period, minimum deterrence continues to lack serious appeal among senior officials. During the second Clinton term, for example, Under Secretary of Defense for Policy Slocombe cautioned a Senate committee about the “risks and disadvantages” of a force with only a “couple of hundred” nuclear weapons.¹⁶⁸ The first, in his view, was the danger that “low numbers” might enable lesser powers to catch up to the United States. (Some years later, Secretary of Defense Rumsfeld made the flip side of this argument, contending that a force of 1,700-2,200 ODSNWs would help “dissuade the emergence of potential or would-be competitors by underscoring the futility of trying to sprint toward parity with us.”)¹⁶⁹ The second, Slocombe said, was the possibility that a very small force would be vulnerable to attack. And the third drawback was that such a force might support only a “city-busting strategy,” which, Slocombe reminded the senators, “has never been U.S. policy.” (It is worth noting that he made these points in presenting the case against proposals for the near-term abolition of nuclear weapons.)

To summarize, several administrations have judged minimum deterrence inadequate for U.S. and allied security on the grounds that such a posture would: 1) violate moral and legal strictures; 2) encourage arms competition (“sprints” toward parity or superiority);

3) lack credibility to deter attacks on allies; 4) increase vulnerability to disarming attacks; 5) offer few retaliatory options in the event of war; 6) invite nuclear attacks on American cities in the wake of U.S. retaliatory strikes; and 7) provide little, if any, offensive capability for limiting damage from enemy attacks.

As a coda to this discussion, consider the case of Jimmy Carter. Prior to his inauguration, President-elect Carter met with the Joint Chiefs of Staff. At one of their meetings, he “startled” the chiefs by suggesting the United States and Soviet Union could reduce their nuclear forces to 200 ballistic missiles each.¹⁷⁰ Several months after taking office, President Carter directed the secretary of defense to undertake “a review of US [nuclear] targeting policy.”¹⁷¹ This Nuclear Targeting Policy Review (NTPR) was conducted over an 18-month period.¹⁷² During that time, the president evinced an interest in nuclear matters by, for example, participating in two nuclear exercises and ordering changes in “the so-called ‘Black Book,’ [SIOP Decision Handbook] which provides the president a written and graphic view of his alternatives for executing the SIOP.”¹⁷³ Near the end of his term, in July 1980, President Carter signed Presidential Directive 59 (PD-59),¹⁷⁴ which drew on the findings of the NTPR and gave “guidance for the continuing evolution of U.S. [nuclear] planning, targeting, and systems acquisition.”¹⁷⁵ The policies, plans, and capabilities related to PD-59 included the following:

- plans informed by specific political-military objectives set by the president;
- deterrence of nonnuclear as well as nuclear attacks against the United States, its forces, and allies;
- deterrence of aggression by the promise to deny Soviet leaders “victory,” however they might define such an outcome (thus the PD-59 approach was described as the “countervailing strategy”);
- the targeting of elements of power highly valued by the Soviet leadership—political and military control, nuclear and conventional forces, and war-supporting industries;
- no targeting of enemy civilian population *per se*;
- a range of attack options, both preplanned in peacetime and improvised in crisis or war, to enable appropriate responses to different types and levels of attacks;
- measures for “escalation control” to keep a limited nuclear war limited, even if such an eventuality was thought unlikely;
- nuclear forces capable of flexible use;
- nuclear forces and associated command, control, communications, and intelligence (C³I) systems that could survive attack and remain operational during a protracted war lasting weeks or months;

- a nuclear “secure reserve force” for use during or after a prolonged conflict (to hedge against wartime uncertainties or deter coercion by third countries, for example);
- capabilities for “bargaining effectively to terminate [a] war on acceptable terms that are as favorable as practical” (excerpt from PD-59);
- an existing force of over 1,000 ICBMs, 600 SLBMs, and more than 400 long- and medium-range bombers, with more than 9,000 nuclear warheads; and
- ongoing programs for new ICBMs (MX), SLBMs (Trident), and air-launched cruise missiles, as well as improved C³I support.¹⁷⁶

In response to criticisms from Capitol Hill, assorted commentators, and arms control groups, Carter administration officials characterized the “countervailing strategy” and its various aspects as wholly consistent with past practice. As one of their statements put it,

The fundamental premises of our countervailing strategy are a natural evolution of the conceptual foundations built over the course of a generation. PD-59 is not a new strategic doctrine; it is not a radical departure from past U.S. strategic policy. Our countervailing strategy, as formally stated in PD-59, is in fact, a refinement, a codification of previous statements of our strategic policy. PD-59 takes the same essential strategic doctrine, and restates it more clearly, more cogently, in the light of current conditions and current capabilities.¹⁷⁷

PD-59 indeed represented continuity with the past and for this very reason was far removed from the 200-missile minimum deterrence force Jimmy Carter broached with the Joint Chiefs before the start of his administration.

10. A triad of strategic nuclear forces is valuable for its resilience, survivability, and flexibility.

The first operational patrol of a ballistic missile submarine began in November 1960.¹⁷⁸ Before then, the strategic nuclear force was composed almost entirely of bombers, with only a handful of ICBMs deployed. In the nearly 50 years since, the United States has always maintained a mixed force of bombers, ICBMs, and SLBMs. By the late 1960s and early 1970s, this tripartite force had become known as the “triad.”¹⁷⁹ “Triad” was more important as a planning construct than as a label, however. The diverse, redundant, flexible, and mutually reinforcing elements of the triad have made for a strategic force better able to adapt to changing conditions, complicate enemy attack planning, withstand attack, and retaliate appropriately than a force with only one or two “legs.” This has been the judgment of every administration from President Nixon to President George W. Bush.

Because of the perceived value of the triad, at least three presidents, based on the open record, have included a requirement for such a force in their formal policy guidance regarding nuclear weapons. In one of his National Security Decision Memoranda, President Ford wrote, “The United States must continue to maintain a Triad composed of land-based ICBMs, SLBMs, and bombers.”¹⁸⁰ In a directive on “U.S. National Security Strategy,” President Reagan ordered that, “The U.S. will retain a capable and credible strategic triad of land-based missiles, manned bombers, and submarine-launched ballistic missiles.”¹⁸¹ And, in Presidential Decision Directive 60, President Clinton, in the words of a top defense aide, “reaffirm[ed] our fundamental commitment to maintain a strategic nuclear posture across a triad of strategic forces.”¹⁸²

In President Clinton’s case, the reaffirmation came after the Nuclear Posture Review of his first term addressed, among other things, the question, “Does the United States still need a triad?”¹⁸³ Similarly, after a “military and force posture review” at the outset of the Carter administration examined the “viability and desirability of the ‘triad’ posture”¹⁸⁴ as one of its topics, Secretary of Defense Brown reported to Congress that, “To survive and respond as the President directs, we plan to continue distributing our retaliatory capability suitably among the three legs of the TRIAD.”¹⁸⁵ Though the Carter and Clinton reviews took place on opposite sides of the Cold War/post-Cold War divide, both were followed by an endorsement of the triad.

Administrations have seen four major advantages in the triad. First, each leg has a useful and unique set of force characteristics. Second, weaknesses in one leg are offset by strengths in the others. Third, the three legs in combination make an enemy attack especially difficult, thereby discouraging a first strike. And fourth, if deterrence breaks down, the varied capabilities of the different legs enable a range of military responses, depending on the nature of the attack and the aims of the United States. Each advantage is discussed below. The main points are drawn primarily from many years of Defense Department annual reports in which the need for the triad has been stated and restated.¹⁸⁶

Consider first the bomber force. Through increases in alert status, forward deployments, and shows of force, bombers “provide...many unique options to demonstrate U.S. resolve in a crisis.”¹⁸⁷ On alert they can survive an attack against their air bases. Their large payloads can accommodate a variety of conventional as well as nuclear weapons, including weapons with variable explosive yields and earth-penetrating bombs for use against hard and deeply buried targets. Bomber weapons can be delivered with a high degree of accuracy. (For many years bombers had a significant edge over ballistic missiles in delivery accuracy.) As manned aircraft, bombers can be recalled from their missions, redirected in flight, and reconstituted after an attack for later reuse. They can strike both fixed targets and, with the necessary targeting updates, those that are mobile. Bomber aircrews also can assess damage inflicted by earlier attacks and carry out or refrain from follow-on strikes.

ICBMs have a high alert rate (“near 100 percent,” according to the Air Force).¹⁸⁸ Their operating cost by some measures has been lower than that for bombers or SSBNs. While ICBM silos are vulnerable to attack, an enemy would have to expend a large number of

accurate ballistic missile warheads (roughly 1,000) to eliminate the bulk of the present Minuteman force.¹⁸⁹ By virtue of their alert rate, short time of flight, and reliable communications with higher commands, ICBMs are capable of rapid response against time-sensitive targets. The combination of the high delivery accuracy and sizable explosive yield for their warheads gives ICBMs the capability to destroy a wide range of targets, including most types of hardened targets. Single-warhead ICBMs (which represent a significant portion of the current Minuteman inventory)¹⁹⁰ are better suited than multi-warhead missiles for certain selective strikes. Unlike bombers, ICBMs have not faced active defenses that might impede the accomplishment of their missions.

The SSBN fleet, “which is virtually undetectable when on patrol, is the most survivable and enduring element of the strategic triad.”¹⁹¹ Approximately two-thirds of ballistic missile submarines are at sea at any given time and additional submarines not in overhaul could be generated during a crisis.¹⁹² SLBMs today compare favorably with ICBMs in their responsiveness and lethality, whereas the land-based missiles had an advantage in the past. Like ICBMs, SLBMs would be opposed by, at worst, limited missile defenses. Because of the virtual invulnerability of deployed SSBNs, a large reserve of SLBM warheads could be withheld during and after a conflict to: 1) enforce intrawar limitations (by posing the threat of reciprocal retaliation if U.S. cities were struck); 2) coerce an end to hostilities on terms acceptable to the United States (by threatening further escalation if no agreement were reached); and 3) deter opportunistic aggression by a *tertius gaudens*, a third country that might “[try] to move in to sort of pick on the bones” while the United States was recovering from the body blows suffered at the hands of its original antagonist.¹⁹³

In combination, the three triad legs are mutually reinforcing, with the strengths of each complementing the strengths of the others or compensating for their weaknesses. For example, bombers based in the United States would take hours to reach their targets; warheads from SLBMs and ICBMs could strike within minutes to hit time-sensitive targets. Bombers, on the other hand, can be used for coercive displays of military power; SSBNs must operate surreptitiously for their survival and silo-based ICBMs are stationary. ICBMs and bombers are vulnerable to attack; SSBNs are highly survivable at sea. ICBMs, however, are deployed in a few hundred silos that could only be destroyed by a large-scale attack; the few bomber and SSBN bases could be destroyed by a relatively small number of nuclear weapons.¹⁹⁴ Each triad leg today has the weapons and delivery accuracy to threaten a wide range of targets. (At present, however, only bombers carry earth-penetrating weapons for attacking underground targets and have some potential for striking mobile targets.) “No single weapons system incorporates all of [the required] capabilities,” noted Frank Carlucci, President Reagan’s second secretary of defense, but the

Triad as a whole must possess various characteristics and capabilities—including survivability, prompt response, endurance, mission flexibility, and sufficient accuracy and warhead yield. . . . In their entirety, the synergistic capabilities provided by the three types of weapons systems incorporate all of the elements necessary to deter any type of nuclear attack.¹⁹⁵

The mutually reinforcing nature of the triad offers a hedge against a major technical problem, operational failure, or technological surprise that might impair one of the legs. As a consequence, no single adverse development is likely to undermine the effectiveness of the entire strategic force. Early in the life of the triad, John Foster, director of defense research and engineering under Presidents Johnson and Nixon, urged that it was “absolutely essential that we not rely solely on any single system...that we plan to rely for the foreseeable future on land-based missiles, sea-based systems, and on aircraft” because “any system we might build is potentially subject to being negated if the Soviets spend enough money and if technology advances in some possibly unforeseen ways to adversely affect our system vulnerability.”¹⁹⁶ With a triad, Defense Secretary Brown remarked several years later, the United States “would have the time—without renewed fear of bomber or missile gaps—to redress any shortcomings in the exposed leg” and not be “driven into panicky and costly crash programs.”¹⁹⁷

The benefit cited by Foster and Brown is not hypothetical. From the 1960s through the 1980s, the overall resilience of the triad allowed the United States to pursue a long series of remedies for deficiencies in the bomber leg caused by improvements in Soviet air defenses. These measures included a shift from high- to low-altitude penetration, plans to suppress defenses through ballistic missile strikes before bombers arrived, arming bombers with suppression weapons of their own, acquisition of a new bomber (the B-1) designed to evade defenses through low-altitude and (originally) supersonic flight, equipping older bombers (B-52s) with long-range cruise missiles for attack from outside defense coverage, and acquisition of another bomber (the B-2) with low-observable (stealth) features that made the aircraft difficult for radar and other sensors to detect and track. During the 1970s and 1980s, the triad also afforded time to deal with the vulnerability of the ICBM force that arose from Soviet deployment of silo-busting missiles, although no fix was implemented before the Soviet Union disintegrated. And when significant problems with Polaris and Poseidon SLBM warheads emerged, the insurance provided by the ICBM and bomber legs permitted the required retrofits to be made in a deliberate manner. (A Department of Energy-sponsored study done in the early 1980s reported that “at times in the past, the warheads for a large part of the U.S. [fleet ballistic missile submarine] force have been found to be badly deteriorated. At different times, a large fraction of the warheads either obviously or potentially would not work; they were obvious or potential duds.”)¹⁹⁸ The Clinton administration’s 1994 NPR concluded that the hedge against technical failure of a delivery platform or warhead or technological breakthrough by an opponent was the “primary reason to retain a triad,” particularly when the United States “relies on fewer types of nuclear weapon systems than in the past.”¹⁹⁹

A triad of strategic forces can make enemy preparations to conduct a first strike and defend against retaliation both more complex and more expensive than otherwise would be the case. Even when Soviet strategic nuclear strength was near its height, U.S. defense officials still determined that though the “enemy might be able to develop the capability to knock out or otherwise neutralize one leg of the Triad at any given time, he would find the task of simultaneously neutralizing all three legs well beyond his

ingenuity and means.”²⁰⁰ For example, given the difference in flight times between ICBMs launched from the Soviet Union and Soviet SLBMs launched from submarines closer to the United States, either U.S. bombers or ICBMs would have been able to escape a first strike. If Soviet land- and sea-based missiles had been launched at the same time, the SLBM warheads would have struck first, most likely against “soft” targets—bomber bases and command-and-control centers—allowing silo-based ICBMs to be launched before their Soviet counterparts arrived roughly 15 minutes later. If, on the other hand, Soviet ICBMs had been launched first, U.S. bombers would have had more warning time within which to take off from their airfields.²⁰¹

Three distinct force components also can prevent an opponent from concentrating resources to counter one or two legs. Over 40 years ago, Secretary of Defense McNamara in a memorandum to President Johnson explained that,

As long as we have strategic aircraft, the enemy cannot effectively defend against ballistic missiles without concurrently defending against aircraft and their air-to-surface missiles (ASM). Conversely, defense against aircraft without concurrent defense against ballistic missiles also leaves him vulnerable. ... Without a bomber threat, [air defense] resources could be reallocated to their strategic retaliatory forces, anti-missile defenses, or some other military program that might cause us more trouble.²⁰²

With the triad, said Secretary of Defense Brown, enemy defenses are burdened with defeating “weapons approaching... from different directions, at varying speeds, and along a variety of trajectories.”²⁰³ Moreover, a strategic force that includes both penetrating bombers (B-2s) and standoff aircraft with cruise missiles (B-52s) can compel an adversary to invest not only in perimeter air defenses, but also close-in defenses of high-value targets. In the Cold War, the threat of U.S. air attack caused the Soviet Union to invest in air defenses a sum several times larger than the amount the United States spent on its bomber force.²⁰⁴ In these ways, the triad can impose costs on an adversary, dilute opposing defense efforts, and divert resources from enemy offensive forces.

The varied capabilities of the triad have given the United States the flexibility to “ride out an enemy attack and retaliate with deliberation and control against the designated portions of the target system.”²⁰⁵ Force diversity has aided development of the many attack options added to U.S. nuclear war plans since the early 1960s.²⁰⁶ With its mix of bombers, ICBMs, and SLBMs, the United States has maintained the wherewithal to:

- pose deterrent threats that might be credible to adversaries and allies;
- respond in a manner consistent with the character of an enemy attack and U.S. political-military objectives at the time;
- act against any aggressor, regardless of geographic location;
- carry out attacks of varying scale, including those involving only a few weapons;

- attack different types, sets, and combinations of military, leadership, and economic targets;
- strike targets from minutes to months after the start of a war;
- conduct phased offensive operations (as opposed to a single, reflex-like retaliatory strike); and
- reduce unintended civilian damage.

Administrations have held that with such force and planning flexibility, the United States is better prepared not only to deter conflict but, in the event of war, to defeat the opponent, achieve key aims (or acceptable terms), and do so at the lowest possible level of violence. That at least has been the hope. The sheer destructiveness of nuclear weapons, the fog and friction of war, limitations of C⁴ISR systems,²⁰⁷ or the recalcitrance of the enemy very well could leave the hope unrealized. Yet, as Harold Brown once argued,

I am convinced that we must do everything we can to make...escalation control [of a limited nuclear conflict] possible, that opting out of this effort and consciously resigning ourselves to the inevitability of such escalation is a serious abdication of the awesome responsibilities nuclear weapons, and the unbelievable damage their uncontrolled use would create, thrust upon us.²⁰⁸

While the triad has been a constant in strategic force planning, its size, composition, and capabilities have changed. The number of launchers (bombers, ICBMs, and SLBMs) peaked around 2,200 in the late 1960s, plateaued, and then declined after the Cold War to a level currently less than half as large. The number of warheads ultimately exceeded 10,000, and then dropped after the Soviet fall to less than one-fifth that figure today. The distribution of warheads among triad legs also has changed. In the last 40 years, the ICBM share of the total has remained roughly one-fifth, while the bomber share has decreased from half to one-third, and the SLBM share has increased from one-fourth to half.²⁰⁹ New, advanced generations of weapons have succeeded old, although modernization in the post-Cold War period has been limited. The bomber force has stayed part of the triad, but since the 1990s its primary role has shifted to the conventional realm, at the expense of its nuclear duties.²¹⁰ Both the bomber leg and ICBM component have, as discussed, experienced problems regarding their vulnerability to attack. In 2001, the Bush administration folded the nuclear triad into a revised planning construct, the “New Triad.” The New Triad encompasses long-range strike capabilities (nonnuclear as well as nuclear), active and passive defenses, and the defense-industrial infrastructure that supports strike capabilities and defensive systems. This augmented triad is designed to provide U.S. leaders with additional options for dealing with the variety of adversaries, contingencies, and military problems of the unfolding security environment.²¹¹ In short, the triad of today and the triad of the past are both the same and different.

Conclusion

The call for a “nuclear consensus” occasionally is heard. Such a consensus, it is said, is needed to guide the development of nuclear policy, strategy, plans, and forces. The set of continuities described here represents a consensus on at least some important nuclear issues. Moreover, it is not a consensus contrived by a think tank or task force, but one forged in the hard experience of different administrations, both Republican and Democratic, struggling with the difficult problems posed by nuclear weapons, both during and after the Cold War.

What are the elements of this partial consensus? First, the role for nuclear forces should be limited to the greatest possible extent, but their contributions to deterrence and defense should not be underestimated. Second, nuclear forces protect allies as well as the United States itself. Third, they deter not only nuclear coercion and attack, but also large-scale conventional aggression and chemical and biological use. Fourth, for this reason, the option to use nuclear weapons first should be preserved. Fifth, U.S. and allied security also requires a diverse and flexible nuclear force of the first rank. Sixth, all components of this force must be safe, secure, and always under authorized control. And seventh, nonnuclear offensive and defensive capabilities should be pursued to reduce reliance on nuclear weapons.

The policies of the George W. Bush administration have been squarely within this consensus. If history is any guide, the same will be true of its successor.

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⁶⁷ President Reagan, Address to the Nation on Defense and National Security, March 23, 1983, in *Public Papers of the Presidents of the United States: Ronald Reagan, 1983, Book I* (Washington, D.C.: GPO, 1984), p. 443.

⁶⁸ Steven A. Hildreth, *The Strategic Defense Initiative: Issues for Phase I Deployment*, IB88033 (Washington, D.C.: Congressional Research Service, March 30, 1988).

⁶⁹ Amb. Henry Cooper, director, Strategic Defense Initiative Organization, and Stephen J. Hadley, assistant secretary of defense for international security policy, "Global Protection Against Limited Strikes (GPALS): Briefing on the Refocused Strategic Defense Initiative (Edited Transcript)," February 12, 1991.

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⁷¹ National Missile Defense Act of 1999, Public Law 106-38, July 22, 1999; and Statement on Signing the National Missile Defense Act of 1999, in *Public Papers of the Presidents of the United States: William J. Clinton, 1999, Book 2* (Washington, D.C.: GPO, 2001), pp. 1304-1305.

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⁷³ Office of the Press Secretary, The White House, "National Policy on Ballistic Missile Defense," fact sheet, May 20, 2003. President Bush's classified policy guidance for missile defense is contained in National Security Policy Directive 23, also titled "National Policy on Ballistic Missile Defense." See Green, in Senate Armed Services Committee, *Department of Defense Authorization for Appropriations for Fiscal Year 2008, Part 7*, op. cit., p. 127.

⁷⁴ For a brief history of civil defense, see Homeland Security National Preparedness Task Force, *Civil Defense and Homeland Security: A Short History of National Preparedness Efforts* (Washington, D.C.: Department of Homeland Security, September 2006). See also B. Wayne Blanchard, "American Civil Defense, 1945-1975: The Evolution of Programs and Policies" (Ph.D. dissertation, University of Virginia, May 1980).

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⁷⁶ Presidential Directive/NSC 41 and National Security Decision Directive 26.

⁷⁷ Harry S. Truman, *Memoirs, Vol. II: Years of Trial and Hope* (Garden City, N.Y.: Doubleday, 1956), p. 306. See also Statement by President Truman at a Meeting at Blair House, Washington, July 14, 1949, 8:15 pm, in *Foreign Relations of the United States, 1949, Vol. I: National Security Affairs, Foreign Economic Policy* (Washington, D.C.: GPO, 1976), p. 481: "I am of the opinion we'll never obtain international control. Since we can't obtain international control we must be strongest in atomic weapons."

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- ⁷⁹ Statement by the President Concerning the Development and Testing of Nuclear Weapons, November 2, 1961, in *Public Papers of the Presidents of the United States: John F. Kennedy, 1961* (Washington, D.C.: GPO, 1962), p. 693.
- ⁸⁰ Special Message to the Congress on the State of the Nation's Defenses, January 18, 1965, in *Public Papers of the Presidents of the United States: Lyndon B. Johnson, 1965, Book I* (Washington, D.C.: GPO, 1966), pp. 63, 64.
- ⁸¹ Second Annual Report to the Congress on Foreign Policy, op. cit., pp. 309, 310.
- ⁸² National Security Decision Memorandum 348, "U.S. Defense Policy and Military Posture," January 20, 1977 (Top Secret/Sensitive; declassified, February 26, 1998), available at <http://www.ford.utexas.edu/>.
- ⁸³ Address at Wake Forest University, March 17, 1978, and Remarks at the Opening Ceremonies of the North Atlantic Summit, May 30, 1978, in *Public Papers of the Presidents of the United States: Jimmy Carter, 1978, Book I* (Washington, D.C.: GPO, 1979), pp. 532, 1013.
- ⁸⁴ National Security Decision Directive 32, op. cit.
- ⁸⁵ Letter of Transmittal to the Senate, November 25, 1991, in *Treaty with the Union of Soviet Socialist Republics on the Reduction and Limitation of Strategic Offensive Arms (The START Treaty)*, Senate Treaty Doc. 102-29 (Washington, D.C.: GPO, 1991), p. iv.
- ⁸⁶ *A National Security Strategy of Engagement and Enlargement* (Washington, D.C.: The White House, July 1994), p. 12.
- ⁸⁷ Written response for the record by Rumsfeld in Senate Foreign Relations Committee, *Treaty on Strategic Offensive Reduction: The Moscow Treaty*, S. Hrg. 107-622, 107th Cong., 2d sess. (Washington, D.C.: GPO, 2002), p. 117. The second-to-none standard was among the results of the 2001 Nuclear Posture Review (see Assistant Secretary of Defense for International Security Policy J.D. Crouch, special briefing on the Nuclear Posture Review, January 9, 2002, briefing slide titled "QDR: Defense Policy Goals," Department of Defense release). President Bush "adopted [the Nuclear Posture Review] as the foundation of U.S. strategic doctrine" (see Hadley, remarks to the Center for International Security and Cooperation, op. cit.).
- ⁸⁸ See James R. Schlesinger, *Annual Defense Department Report for FY 1975* (Washington, D.C.: GPO, March 4, 1974), pp. 27, 43-45; Schlesinger, *Annual Defense Department Report for FY 1976 and FY 1977* (Washington, D.C.: GPO, February 5, 1975), pp. I-13—I-14, II-7, II-9; Donald H. Rumsfeld, *Annual Defense Department Report for FY 1977* (Washington, D.C.: GPO, January 27, 1976), pp. iii, 45, 48, 51; Harold Brown, *Department of Defense Annual Report for Fiscal Year 1979* (Washington, D.C.: GPO, February 2, 1978), pp. 5-6, 56-57; Brown, *Department of Defense Annual Report for Fiscal Year 1980* (Washington, D.C.: GPO, January 25, 1979), p. 64; Brown, *Department of Defense Annual Report for Fiscal Year 1981* (Washington, D.C.: GPO, January 29, 1980), pp. 68-69; and Brown, *Department of Defense Annual Report for Fiscal Year 1982* (Washington, D.C.: GPO, January 19, 1981), pp. 43-44.
- ⁸⁹ Remarks at the New Mexico State Democratic Convention, June 4, 1960, available at <http://www.jfklibrary.org/>; and remarks in the Senate as recorded in *Congressional Record—Senate*, June 14, 1960, p. 12524. See also The President's News Conference, November 8, 1961, in *Public Papers of the Presidents of the United States: John F. Kennedy, 1961*, op. cit., p. 708.
- ⁹⁰ The President's News Conference With President Vladimir Putin of Russia, November 13, 2001, in *Public Papers of the Presidents of the United States: George W. Bush, 2001, Book II* (Washington, D.C.: GPO, 2003), p. 1392; and National Security Presidential Directive 10, cited by Deputy Assistant Secretary of Defense for Forces Policy Brian Green, remarks at the 36th Annual Institute for Foreign Policy Analysis-Fletcher Conference on National Security Policy, "Nuclear and Non-Nuclear Forces in 21st-Century Deterrence: Implementing the New Triad," Washington, D.C., December 14, 2005, transcript available at <http://www.fletcherconference.com/oldconf.htm>. "Operationally deployed strategic nuclear warheads" are defined by the United States as "reentry vehicles on ICBMs in their launchers, reentry vehicles on SLBMs [submarine-launched ballistic missiles] in their launchers onboard submarines, and nuclear armaments loaded on heavy bombers or stored in weapons storage areas of heavy bomber bases. ...a small number of spare strategic nuclear warheads (including spare ICBM warheads)...located at heavy bomber bases [are] not consider[ed]...to be operationally deployed strategic nuclear warheads." "Article-by-Article Analysis of the Treaty Between the United States of America and the Russian Federation on Strategic Offensive Reductions," in Senate Foreign Relations Committee, *Treaty on Strategic Offensive Reduction*, op. cit., p. 271.

⁹¹ National Nuclear Security Administration, “NPT [Non-Proliferation Treaty] Article VI Accomplishments,” n.d.

⁹² Department of State, *Annual Report on the Implementation of the Moscow Treaty—2008* (Washington, D.C.: Department of State, 2008), p. 2.

⁹³ A former chief of the Russian Strategic Missile Troops main staff told a meeting of Russian and American defense specialists that Russia planned to deploy approximately 2,000 strategic nuclear warheads in 2012. Col.-Gen. (ret.) Viktor Yesin, remarks at a meeting of the U.S. Nuclear Strategy Forum, Fairfax, Va., Nov. 27, 2007.

⁹⁴ House Joint Resolution 1227, later Public Law 92-448, signed September 30, 1972.

⁹⁵ *Congressional Record—Senate*, January 26, 1996, p. S 462.

⁹⁶ *Report of the Select Committee on U.S. National Security and Military/Commercial Concerns with the People’s Republic of China, Vol. I*, House Report 105-851, 105th Cong., 2d sess. (Washington, D.C.: GPO, 1999), Chapter 2, “PRC Theft of U.S. Thermonuclear Weapons Design Information.”

⁹⁷ See Attorney General’s Review Team on the Handling of the Los Alamos National Laboratory Investigation, *Final Report* (Washington, D.C.: Department of Justice, May 2000) (Top Secret; declassified in part, December 12, 2001), available at <http://www.justice.gov/ag/readingroom/bellows.htm>.

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⁹⁹ “The Nuclear Posture Review affirms that the United States has not only a national deterrent posture, but an international nuclear posture. Indeed, the United States extends the deterrent protection of its nuclear arsenal to its allies. Nowhere is this more evident than in the area of [nonstrategic nuclear forces]. For nearly 50 years, the United States has maintained a sizable military presence in regions deemed vital to American national interests.” William J. Perry, *Department of Defense Annual Report to the President and the Congress* (Washington, D.C.: GPO, February 1995), p. 88.

¹⁰⁰ International Security Advisory Board, *Report on Proliferation Implications of the Global Expansion of Civilian Nuclear Power* (Washington, D.C.: Department of State, April 7, 2008), p. 4.

¹⁰¹ For discussions of U.S. nuclear strategy, plans, and forces in relation to NATO, see the sources cited in note 39.

¹⁰² Watson, *Into the Missile Age*, op. cit., pp. 556-561; President Kennedy, Address Before the Canadian Parliament in Ottawa, May 17, 1961, in *Public Papers of the Presidents of the United States: John F. Kennedy, 1961*, op. cit., p. 385; Remarks by Secretary McNamara, NATO Ministerial Meeting, 5 May 1962, Restricted Session (Top Secret; declassified in part, August 17, 1979), pp. 23-24, available at <http://www.dod.mil/pubs/foi/rdroom.html>; Henry A. Kissinger (national security adviser to President Nixon), National Security Decision Memorandum 132, “Modification of SSBN Commitments to NATO,” September 13, 1971 (Top Secret; declassified, February 13, 2007), available at <http://nixon.archives.gov/>; Brent Scowcroft (national security adviser to President Ford), National Security Decision Memorandum 328, “Modification of SSBN Commitments to NATO,” May 4, 1976 (this document remains classified, though the title is unclassified); Office of the Assistant to the Secretary of Defense (Atomic Energy), *History of the Custody and Deployment of Nuclear Weapons, July 1945 through September 1977* (Washington, D.C.: Department of Defense, February 1978) (Top Secret/Restricted Data; declassified in part, 1999), pp. 167, BIB-32, A-7, available at <http://www.dod.mil/pubs/foi/rdroom.html>; and Zbigniew Brzezinski (national security adviser to President Carter), Presidential Directive/NSC-48, “Ballistic Missile Submarine Commitments to NATO,” April 4, 1979 (Top Secret; declassified in part, August 2, 1995), available at <http://www.jimmycarterlibrary.org/>.

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www.nautilus.org; President Bush, Address to the Nation on United States Nuclear Weapons Reductions, September 27, 1991, in *Public Papers of the Presidents of the United States: George Bush, 1991, Book II* (Washington, D.C.: GPO, 1992), p. 1222; and South Korean President Roh Tae Woo, television address, December 18, 1991, translated in Foreign Broadcast Information Service, *Daily Report: East Asia*, FBIS-EAS-91-243, December 18, 1991, pp. 13-14.

¹⁰⁶ Remarks on the Situation in North Korea, October 9, 2006, in *Weekly Compilation of Presidential Documents*, vol. 42, no. 41 (October 16, 2006), p. 1768.

¹⁰⁷ Remarks With Japanese Foreign Minister Taro Aso After Their Meeting, Tokyo, October 18, 2006, Department of State transcript.

¹⁰⁸ The 38th Security Consultative Meeting Joint Communique, October 20, 2006, Department of Defense release.

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¹¹⁵ Senate Governmental Affairs Committee, *The Future of Nuclear Deterrence*, op. cit., p. 11.

¹¹⁶ Secretaries Bodman, Gates, and Rice, "National Security and Nuclear Weapons: Maintaining Deterrence in the 21st Century," op. cit., p. 3. See also the following statements: *The National Security Strategy of the United States of America* (Washington, D.C.: The White House, March 2006), p. 22; Michael G. Vickers, assistant secretary of defense for special operations/low intensity conflict and interdependent capabilities, prepared statement before the Senate Armed Services Committee Subcommittee on Strategic Forces, March 12, 2008, p. 2; Christopher A. Ford, United States special representative for nuclear nonproliferation, Department of State, "Achieving and Sustaining Nuclear Weapons Elimination," paper delivered at the Conference on "Preparing for 2010: Getting the Process Right," Annecy, France, March 17, 2007; John R. Harvey, director of policy planning, National Nuclear Security Administration (NNSA), "Nonproliferation's New Soldier," *Bulletin of the Atomic Scientists*, vol. 63, no. 4 (July/August 2007), p. 33; and Thomas P. D'Agostino, administrator, NNSA, William H. Tobey, deputy administrator, NNSA, and Christopher A. Ford, "The United States and Article VI: A Record of Accomplishment," briefing, February 6, 2008, slide 8.

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¹¹⁹ For a recent discussion, see “A New Look at No First Use,” *Policy Dialogue Brief* (Muscatine, Ia.: Stanley Foundation, July 2008). This report summarizes a conference on “US Nuclear Weapons Doctrine: Can We Adopt No First Use?” sponsored by the Stanley Foundation and the Center for International Security and Cooperation at Stanford University.

¹²⁰ Letter from Secretary of State Rusk to Acting Secretary-General Thant: Use of Nuclear Weapons, June 30, 1962, in Arms Control and Disarmament Agency, *Documents on Disarmament, 1962, Vol. I* (Washington, D.C.: GPO, 1963), pp. 629-631.

¹²¹ Raymond L. Garthoff, *Détente and Confrontation: American-Soviet Relations from Nixon to Reagan*, revised edition (Washington, D.C.: Brookings Institution, 1994), p. 205. Garthoff was executive secretary of the U.S. delegation to the talks.

¹²² Fred C. Iklé, director, Arms Control and Disarmament Agency, in House International Relations Committee, *First Use of Nuclear Weapons: Preserving Responsible Control*, 94th Cong., 2d sess. (Washington, D.C.: GPO, 1976), pp. 154-155. (Also testifying were George S. Vest, director, Bureau of Politico-Military Affairs, Department of State, and James P. Wade, deputy assistant secretary of defense for policy planning and National Security Council affairs.) Iklé emphasized to the committee that “our refusal to renounce the first use of nuclear weapons should not be misunderstood. It is not a belligerent posture. It does not propose that nuclear weapons would be used except in the most extreme circumstances when large-scale military aggression threatened the vital interests of the United States and its Allies.”

¹²³ Carter, *Keeping Faith*, op. cit., p. 245.

¹²⁴ Message From Soviet President Brezhnev to the Second Special Session of the U.N. General Assembly Devoted to Disarmament: Non-First Use and Freeze of Nuclear and Chemical Weapons, June 12, 1982, in Arms Control and Disarmament Agency, *Documents on Disarmament, 1982* (Washington, D.C.: GPO, 1985), pp. 350-351; McGeorge Bundy, George F. Kennan, Robert S. McNamara, and Gerard Smith, “Nuclear Weapons and the Atlantic Alliance,” *Foreign Affairs*, vol. 60, no. 4 (Spring 1982), pp. 753-768; “The Pastoral Letter of the U.S. Bishops on War and Peace—The Challenge of Peace: God’s Promise and Our Response,” *Origins* (NC News Service), vol. 13, no. 1 (May 19, 1983), p. 15; Caspar W. Weinberger, *Department of Defense Annual Report to the Congress for Fiscal Year 1984* (Washington, D.C.: GPO, February 1, 1983), p. 55; and Letter of Assistant to the President for National Security Affairs William P. Clark to The Most Reverend Joseph L. Bernardin, archbishop of Chicago, November 16, 1982, with attached letters of Clark to Clare Booth Luce, July 30, 1982; Director of the Arms Control and Disarmament Agency Eugene Rostow to Rev. J. Bryan Hehir, U.S. Catholic Conference, n.d.; and Secretary of Defense Caspar W. Weinberger to Bernardin, September 13, 1982.

¹²⁵ Joschka Fischer, vice chancellor and minister of foreign affairs, Federal Republic of Germany, interview with *Der Spiegel*, November 21, 1998.

¹²⁶ Secretary of Defense William S. Cohen, briefing on the 1998 East Asia Strategy Report, November 23, 1998, Department of Defense transcript. See also Joint Press Conference with Secretary of Defense William S. Cohen and Minister of Defense Rudolf Scharping, Federal Republic of Germany, November 24, 1998, Department of Defense transcript.

¹²⁷ Robert Bell, then-senior director for defense policy and arms control on the National Security Council staff, cited in R. Jeffrey Smith, “Clinton Directive Changes Strategy On Nuclear Arms,” *Washington Post*, December 7, 1997, p. A10; Bell, in Cerniello, “Clinton Issues New Guidelines On U.S. Nuclear Weapons Doctrine,” op. cit.; and Steven Lee Myers, “U.S. ‘Updates’ All-Out Atom War Guidelines,” *New York Times*, December 8, 1997, p. A3. After leaving office, President Clinton misstated U.S. policy regarding nuclear use. In 2004, he told an interviewer that, “We have never said we would use nuclear weapons first.” The former president made this remark while criticizing the George W. Bush administration for “develop[ing] small-scale nuclear weapons for battlefield use,” which also was not the case. See transcript for “The Charlie Rose Show,” PBS TV broadcast, June 23, 2004.

¹²⁸ Statement by Secretary of State Vance: U.S. Assurance on Non-Use of Nuclear Weapons, June 12, 1978, in Arms Control and Disarmament Agency, *Documents on Disarmament, 1978* (Washington, D.C.: GPO, 1980), p. 384.

¹²⁹ “Statement issued on 5 April 1995 by the Honourable Warren Christopher, Secretary of State, regarding a declaration by the President on security assurances for non-nuclear-weapon States Parties to the Treaty on the Non-Proliferation of Nuclear Weapons,” annex to letter from Edward W. Gnehm, chargé d’affaires ad

interim of the Permanent Mission of the United States of America, to Boutros Boutros-Ghali, secretary general of the United Nations, April 6, 1995, UN Document A/50/153, S/1995/263.

¹³⁰ Mike McCurry, White House press secretary and Robert Bell, special assistant to the president and senior director for defense policy and arms control, National Security Council, press briefing, April 11, 1996, White House transcript.

¹³¹ See, for example, “World News Brief: U.S. Pressing Libya On Chemical Arms,” *New York Times*, April 3, 1996, p. A9; and Philip Shenon, “Perry in Egypt, Warns Libya to Halt Chemical Weapons Plant,” *New York Times*, April 4, 1996, p. A6.

¹³² See George Bunn, “The Legal Status of U.S. Negative Security Assurances to Non-Nuclear Weapon States,” *Nonproliferation Review*, vol. 4, no. 3 (Spring-Summer 1997), pp. 1-17; and Bunn, “Expanding Nuclear Options: Is the U.S. Negating Its Non-Use Pledges?” *Arms Control Today*, vol. 26, no. 4 (May/June 1996), pp. 7-10.

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¹³⁸ Judith Miller, “Nuclear Anxieties in a Nuclear World: Theorists Debate Such Basic Issues as Whether A Germ Attack Warrants a Nuclear Reply,” *New York Times*, February 2, 2000, p. A15.

¹³⁹ Nicholas Kralev, “US Drops Pledge on Nukes; Won’t Rule Out Hitting Any States,” *Washington Times*, February 22, 2002, p. A1. See also “Expounding Bush’s Approach To U.S. Nuclear Security: An Interview With John R. Bolton,” *Arms Control Today*, vol. 32, no. 2 (March 2002), pp. 5-6.

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¹⁴¹ See Marc Trachtenberg, “A ‘Wasting Asset’: American Strategy and the Shifting Nuclear Balance, 1949-1954,” *International Security*, vol. 13, no. 3 (Winter 1988-1989), pp. 5-49.

¹⁴² See David Alan Rosenberg, “The Origins of Overkill: Nuclear Weapons and American Strategy, 1945-1960,” *International Security*, vol. 7, no. 4 (Spring 1983), pp. 25, 26-27, 34, 35, 40-41, 42, 63-64, 66; Ernest R. May, John D. Steinbruner, and Thomas W. Wolfe (Alfred Goldberg, ed.), *History of the Strategic Arms Competition, 1945-1972, Part I* (Washington, D.C.: Historical Office, Office of the Secretary of Defense, March 1981) (Top Secret/Restricted Data/No Foreign Dissemination; declassified in part), pp. 459-460, 525, (Part II) 607-608, available at <http://www.dod.mil/pubs/foi/rdroom.html>; Watson, *Into the Missile Age*, op. cit., p. 475; “SIOP-62 Briefing, 13 September 1961, JCS 2056/281 Enclosure,” *International Security*, vol. 12, no. 1 (Summer 1987), p. 50; *History of the Joint Strategic Target Planning Staff: Preparation of SIOP-63* (Offutt Air Force Base, Neb.: Strategic Air Command History and Research Division, January 1964) (Top Secret; declassified in part, February 13, 2007), pp. 14-15, 25-27, in William Burr, ed., “New Evidence on the Origins of Overkill: First Substantive Release of Early SIOP Histories,” *National Security Archive Briefing Book No. 236*, November 22, 2007, available at <http://www.gwu.edu/~narchiv/>; Alfred Goldberg, *A Brief Survey of the Evolution of Ideas About Counterforce*, RM-5431-PR (Santa Monica, Calif.: RAND Corp., October 1967) (Confidential; declassified, 1975), p. 25; William Burr, “The Nixon Administration, the ‘Horror Strategy,’ and the Search for Limited Nuclear Options,” *Journal of Cold War Studies*, vol. 7, no. 3 (Summer 2005), pp. 43, 44, 47, 72; memo from Lawrence E. Lynn, Jr. to Henry Kissinger, subj: The SIOP, November 8, 1969 (Top Secret/Sensitive; declassified, April 12, 2004), p. 2, in William Burr, “‘To Have the Only Option That of Killing 80 Million People is the Height of Immorality’: The Nixon Administration, the SIOP, and the Search for Options, 1969-1974,” *National Security Archive Electronic Briefing Book No. 173*, November 23, 2005, available at <http://www.gwu.edu/~narchiv/>; M.E. Hays, *History of the Joint Strategic Target Planning Staff: SIOP-4H/I, July 1970-June 1971* (Offutt Air Force Base, Neb.: Strategic Air Command Historical Staff, January 6, 1972) (Top Secret/Restricted Data/No Foreign Dissemination; declassified in part), p. 16, available at <http://www.dod.mil/pubs/foi/rdroom.html>; Walton S. Moody, *History of the Joint Strategic Target Planning Staff: SIOP-4J/K, July 1971-June 1972* (Offutt Air Force Base, Neb.: Strategic

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¹⁴⁴ Senate Foreign Relations Committee, *Nuclear War Strategy*, 96th Cong., 2d sess. (Washington, D.C.: GPO, 1981) (Top Secret hearing held on September 16, 1980; sanitized and printed on February 18, 1981), p. 18.

¹⁴⁵ Erdmann, "'War No Longer Has Any Logic Whatever,'" op. cit., p. 116.

¹⁴⁶ Summary Record of the 517th Meeting of the National Security Council, September 12, 1963, in *Foreign Relations of the United States, 1961-1963, Vol. VIII: National Security Policy* (Washington, D.C.: GPO, 1996), Document 141, available at <http://www.state.gov/r/pa/ho/frus/>.

In two meetings with members of the Joint Chiefs of Staff during his first year in office, President Kennedy asked about the likely effectiveness of a U.S. first strike in disarming the Soviet Union. The reply in the first meeting was that "under any circumstances the Soviet Union could strike back hard." In the second meeting, he was told about "the amount of warning time under various conditions that the Soviet Union could derive from [the U.S.] attack approach." See Memorandum of Conference with President Kennedy, February 6, 1961, and Memorandum of Conference with President Kennedy, July 27, 1961, in the same volume, Documents 11 and 40.

¹⁴⁷ Robert Bell, then-senior director for defense policy and arms control on the National Security Council staff, quoted in Cerniello, "Clinton Issues New Guidelines On U.S. Nuclear Weapons Doctrine" op. cit.

¹⁴⁸ *The National Security Strategy of the United States of America* (2006), op. cit., pp. 18, 23; *National Defense Strategy* (Washington, D.C.: Department of Defense, June 2008), p. 14; and *The National Military Strategy of the United States of America: A Strategy for Today; A Vision for Tomorrow* (Washington, D.C.: Joint Chiefs of Staff, 2004), pp. 2, 9.

¹⁴⁹ *The National Security Strategy of the United States of America* (2006), op. cit., p. 23.

¹⁵⁰ The Defense Department defines "preemptive attack" as "an attack initiated on the basis of incontrovertible evidence that an enemy attack is imminent." "Preventive war" is "a war initiated in the belief that military conflict, while not imminent, is inevitable, and that to delay would involve greater risk." (There is no official Defense Department definition for "preventive attack.") See *Department of Defense Dictionary of Military and Associated Terms*, Joint Publication 1-02 (Washington, D.C.: Department of Defense, April 12, 2001; as amended through May 30, 2008).

¹⁵¹ Watson, *Into the Missile Age*, op. cit., pp. 473-495; and Rosenberg, "The Origins of Overkill," op. cit., pp. 50-57.

¹⁵² May et al., *History of the Strategic Arms Competition, Part I*, op. cit., pp. 455-456; and Watson, *Into the Missile Age*, op. cit., pp. 474-475, 478.

¹⁵³ See the discussion in Futrell, *Ideas, Concepts, Doctrine, Vol. I*, op. cit., pp. 618-629.

¹⁵⁴ House Appropriations Committee, *Department of Defense Appropriations for 1961, Part I*, 86th Cong., 2d sess. (Washington, D.C.: GPO, 1960), p. 26.

¹⁵⁵ Quoted in Watson, *Into the Missile Age*, op. cit., p. 476.

¹⁵⁶ *Ibid.*, pp. 481, 485; and Rosenberg, "The Origins of Overkill," op. cit., p. 63.

¹⁵⁷ Hopkins and Goldberg, *The Development of Strategic Air Command*, op. cit., p. 89; Navy Strategic Systems Programs, *Facts/Chronology: Polaris, Poseidon, Trident* (Washington, D.C.: Department of the

Navy, 2000), p. 32; and Scott D. Sagan, "SIOP-62: The Nuclear War Plan Briefing to President Kennedy," *International Security*, vol. 12, no. 1 (Summer 1987), pp. 24-25.

¹⁵⁸ Summary Record of the 517th Meeting of the National Security Council, September 12, 1963, op. cit.

¹⁵⁹ Desmond Ball, *Politics and Force Levels: The Strategic Missile Program of the Kennedy Administration* (Berkeley, Calif.: University of California Press, 1980).

¹⁶⁰ Draft Memorandum from Secretary of Defense McNamara to President Kennedy, subj: Recommended Department of Defense FY'63 Budget and 1963-67 Program, October 6, 1961, Appendix I: Recommended Long Range Nuclear Delivery Forces 1963-1967, September 23, 1961, p. 4 (Top Secret; declassified in part, January 5, 1983), available at <http://www.dod.mil/pubs/foi/rdroom.html>. In addition, many of the arguments McNamara made against the small, independent national nuclear forces of Britain and France also would apply to a U.S. minimum deterrence force. In his May 1962 classified speech to a NATO ministerial meeting in Athens, the secretary of defense reported to the allies that, "our analyses suggest rather strongly that relatively weak nuclear forces with enemy cities as their targets are not likely to be adequate to perform the function of deterrence. In a world of threats, crises, and possibly even accidents, such a posture appears more likely to deter its owner from standing firm under pressure than to inhabit [sic] a potential aggressor. If it is small, and perhaps vulnerable on the ground or in the air, or inaccurate, it enables a major antagonist to take a variety of measures to counter it. Indeed, if a major antagonist came to believe there was a substantial likelihood of it being used independently, this force would be inviting a pre-emptive first strike against it. In the event of war, the use of such a force against the cities of a major nuclear power would be tantamount to suicide, whereas its employment against significant military targets would have negligible effect on the outcome of the conflict. In short, then, weak nuclear capabilities, operating independently, are expensive, prone to obsolescence, and lacking in credibility as a deterrent." Remarks by Secretary McNamara, NATO Ministerial Meeting, op. cit., pp. 11-12.

¹⁶¹ Quoted in Kaplan et al., *The McNamara Ascendancy*, op. cit., p. 320.

¹⁶² See Draft Memorandum from Secretary of Defense McNamara to President Johnson, subj: Recommended FY 1966-1970 Programs for Strategic Offensive Forces, Continental Air and Missile Defense Forces, and Civil Defense, December 3, 1964 (Top Secret; declassified in part, January 5, 1983), pp. 10-12, available at <http://www.dod.mil/pubs/foi/rdroom.html>; and Alain C. Enthoven and K. Wayne Smith, *How Much Is Enough? Shaping the Defense Program, 1961-1969* (New York: Harper & Row, 1971), pp. 67, 175-179, 194-195, 207-208. Enthoven was deputy comptroller and deputy assistant secretary of defense for systems analysis, 1961-1965, and assistant secretary of defense for systems analysis, 1965-1969. Smith was Enthoven's special assistant, 1967-1969.

¹⁶³ Henry S. Rowen, "Formulating Strategic Doctrine," in *Report of the Commission on the Organization of the Government for the Conduct of Foreign Policy, Vol. 4, Appendix K: Adequacy of Current Organization: Defense and Arms Control* (Washington, D.C.: GPO, June 1975), p. 227 (emphasis in original). Rowen was deputy assistant secretary of defense for international security affairs, 1961-1964.

¹⁶⁴ Second Annual Report to the Congress on United States Foreign Policy, op. cit., p. 310.

¹⁶⁵ First Annual Report to the Congress on United States Foreign Policy for the 1970's, February 18, 1970, in *Public Papers of the Presidents of the United States: Richard M. Nixon, 1970* (Washington, D.C.: GPO, 1971), p. 174.

¹⁶⁶ *Department of Defense Annual Report to the Congress for Fiscal Year 1984*, op. cit., p. 55.

¹⁶⁷ *Ibid.*

¹⁶⁸ Senate Governmental Affairs Committee, *The Future of Nuclear Deterrence*, op. cit., pp. 14-15.

¹⁶⁹ Senate Foreign Relations Committee, *Treaty on Strategic Offensive Reduction*, op. cit., p. 81.

¹⁷⁰ Zbigniew Brzezinski, *Power and Principle: Memoirs of the National Security Adviser, 1977-1981* (New York: Farrar, Straus, and Giroux, 1983), p. 157. See also Mark Perry, *Four Stars* (Boston: Houghton Mifflin Co., 1989), pp. 264-266; Thomas Powers, "Choosing a Strategy for World War III," *Atlantic Monthly*, vol. 250, no. 5 (November 1982), pp. 82, 84; Edward Walsh and George C. Wilson, "Carter to Get Study on A-Deterrence," *Washington Post*, January 28, 1977, p. A3; and Rowland Evans and Robert Novak, "Nuclear 'Blockbuster,'" *Washington Post*, January 27, 1977, p. A24. In a 1985 interview, President Carter said that upon entering office he had wanted to achieve "a much more dramatic reduction in nuclear arsenals" than the Nixon and Ford administrations had pursued in their negotiations with the Soviet Union, and added, "I wanted to build to... what I considered to be a penultimate arrangement, that is, a small number of *single-warhead* missiles (with the missiles all uniform in size) and deploy them in a

totally invulnerable place. That was my goal.” Quoted in Michael Charlton, *From Deterrence to Defense: The Inside Story of Strategic Policy* (Cambridge, Mass.: Harvard University Press, 1987), p. 71 (emphasis in original).

¹⁷¹ Presidential Directive/NSC-18, “U.S. National Strategy,” August 26, 1977 (Top Secret; declassified in part, January 6, 1992), p. 5, available at <http://www.jimmycarterlibrary.org>.

¹⁷² *Department of Defense Annual Report for Fiscal Year 1982*, op. cit., p. 39.

¹⁷³ Odom, “The Origins and Design of Presidential Decision-59: A Memoir,” op. cit., p. 181. See also Odom, in *C³I and the Telecommunications at the Policy Level*, Incidental Paper for Seminar on Command, Control, Communications, and Intelligence (Cambridge, Mass.: Center for Information Policy Research, Harvard University, December 1980), p. 3; and Michael Getler, “Carter Directive Modifies Strategy for a Nuclear War,” *Washington Post*, August 6, 1980, p. A10.

¹⁷⁴ PD/NSC-59, “Nuclear Weapons Employment Policy,” op. cit.

¹⁷⁵ *Department of Defense Annual Report for Fiscal Year 1982*, op. cit., p. 39.

¹⁷⁶ PD/NSC-59, “Nuclear Weapons Employment Policy,” op. cit.; President Carter, Remarks at the Annual Convention of the American Legion, Boston, August 21, 1980, in *Public Papers of the Presidents of the United States: Jimmy Carter, 1980-81, Book II* (Washington, D.C.: GPO, 1982), p. 1553; Brzezinski, *Power and Principle*, op. cit., pp. 454-459; Odom, “The Origins and Design of Presidential Decision-59: A Memoir,” op. cit.; Secretary of Defense Harold Brown, remarks prepared for delivery at the convocation ceremonies for the 97th Naval War College class, Newport, R.I., August 20, 1980, Department of Defense release; Senate Foreign Relations Committee, *Nuclear War Strategy*, op. cit.; *Department of Defense Annual Report for Fiscal Year 1982*, op. cit., pp. 38-43, 124; Walter Slocombe, “The Countervailing Strategy,” *International Security*, vol. 5, no. 4 (Spring 1981), pp. 18-27; General Accounting Office, *Countervailing Strategy Demands Revision Of Strategic Force Acquisition Plans*, MASAD-81-35 (Washington, D.C.: General Accounting Office, August 5, 1981); *Department of Defense Annual Report for Fiscal Year 1979*, op. cit., p. 105; and Department of Defense, *PRM/NSC-10 Military Strategy and Force Posture Review, Final Report* (Washington, D.C.: Department of Defense, June 1977) (Top Secret; declassified in part, August 13, 1993), pp. 38-39, available at <http://www.jimmycarterlibrary.org>. President Carter issued four other directives related to PD-59: Presidential Directive/NSC 41, “U.S. Civil Defense Policy,” op. cit.; Presidential Directive/NSC-53, “National Security Telecommunications Policy,” November 15, 1979 (unclassified); Presidential Directive/NSC-57, “Mobilization Planning,” March 3, 1980 (Confidential; declassified in part); and Presidential Directive/NSC-58, “Continuity of Government,” June 30, 1980 (still classified, though the title is unclassified). All but the latter directive are available at <http://www.jimmycarterlibrary.org> and discussed in Brzezinski, *Power and Principle*, op. cit., pp. 457, 459, and Odom, “The Origins and Design of Presidential Decision-59: A Memoir,” op. cit., pp. 189-192.

¹⁷⁷ Administration response for the record, in Senate Foreign Relations Committee, *Nuclear War Strategy*, op. cit., p. 29. See also *Department of Defense Annual Report for Fiscal Year 1982*, op. cit., p. 42; Brown, remarks prepared for delivery at the convocation ceremonies for the 97th Naval War College class, op. cit.; and Slocombe, “The Countervailing Strategy,” op. cit., p. 24.

¹⁷⁸ Navy Strategic Systems Programs, *Facts/Chronology: Polaris, Poseidon, Trident*, op. cit., p. 32.

¹⁷⁹ See the discussion in Robert Frank Futrell, *Ideas, Concepts, Doctrine: Basic Thinking in the United States Air Force, 1961-1984, Vol. II* (Maxwell Air Force Base, Ala.: Air University Press, December 1989), pp. 384-386.

¹⁸⁰ National Security Decision Memorandum 348, “U.S. Defense Policy and Military Posture,” op. cit.

¹⁸¹ National Security Decision Directive 32, “U.S. National Security Strategy,” op. cit.

¹⁸² Bell, in Cerniello, “Clinton Issues New Guidelines On U.S. Nuclear Weapons Doctrine,” op. cit. According to one account, President Clinton also endorsed the triad in an earlier Presidential Decision Directive issued soon after the completion of the 1994 NPR. See David B. Ottaway and Steve Coll, “Trying to Unplug the War Machine,” *Washington Post*, April 12, 1995, p. A29.

¹⁸³ *Department of Defense Annual Report to the President and the Congress* (1994), p. 8; and Deputy Secretary of Defense John M. Deutch, in House Foreign Affairs Committee, *U.S. Nuclear Policy*, 103d Cong., 2d sess. (Washington, D.C.: GPO, 1995), pp. 5, 32, 34. There are reports that the Clinton NPR examined the alternative of eliminating the ICBM force and relying on a “dyad” of SSBNs and bombers. See Janne E. Nolan, *An Elusive Consensus: Nuclear Weapons and American Security After the Cold War*

(Washington, D.C.: Brookings Institution, 1999), pp. 52-59; and Ottaway and Coll, "Trying to Unplug the War Machine," op. cit.

¹⁸⁴ President Carter, Presidential Review Memorandum/NSC-10, "Comprehensive Net Assessment and Military Force Posture Review," February 18, 1977 (Secret; declassified, January 6, 1992), available at <http://www.jimmycarterlibrary.org>.

¹⁸⁵ *Department of Defense Annual Report for Fiscal Year 1979*, op. cit., p. 58. President Carter in his memoirs wrote of the need for the triad; see *Keeping Faith*, op. cit., p. 82.

¹⁸⁶ *Annual Defense Department Report for FY 1976 and FY 1977*, op. cit., p. 1-14; *Annual Defense Department Report for FY 1977*, op. cit., pp. 59, 62; *Department of Defense Annual Report for Fiscal Year 1979*, op. cit., pp. 58-59; *Department of Defense Annual Report for Fiscal Year 1980*, op. cit., p. 17; *Department of Defense Annual Report for Fiscal Year 1981*, op. cit., pp. 70, 88; *Department of Defense Annual Report to the Congress for Fiscal Year 1984*, op. cit., p. 54; *Department of Defense Annual Report to the Congress for Fiscal Year 1985*, op. cit., pp. 29-30; Caspar W. Weinberger, *Department of Defense Annual Report to the Congress for Fiscal Year 1987* (Washington, D.C.: GPO, February 5, 1986), p. 46; Weinberger, *Department of Defense Annual Report to the Congress for Fiscal Year 1988* (Washington, D.C.: GPO, January 12, 1987), pp. 55-56; Frank C. Carlucci, *Department of Defense Annual Report to the Congress for Fiscal Year 1989* (Washington, D.C.: GPO, February 18, 1988), p. 54; Dick Cheney, *Department of Defense Annual Report to the President and the Congress* (Washington, D.C.: GPO, January 1991), pp. 53-55; Cheney, *Department of Defense Annual Report to the President and the Congress* (Washington, D.C.: GPO, February 1992), pp. 63-64; *Department of Defense Annual Report to the President and the Congress* (1993), op. cit., pp. 69-70; *Department of Defense Annual Report to the President and the Congress* (1995), op. cit., p. 88; and *Department of Defense Annual Report to the President and the Congress* (2002), op. cit., pp. 85-87. For an early high-level statement of the need for a strategic nuclear triad, see President Nixon's Second Annual Report to the Congress on United States Foreign Policy, op. cit., p. 312.

¹⁸⁷ *Department of Defense Annual Report to the President and the Congress* (1991), op. cit., p. 55.

¹⁸⁸ U.S. Air Force, "LGM-30 Minuteman III," fact sheet, November 2006.

¹⁸⁹ This assumes that to achieve high damage expectancies, an enemy would allocate two warheads against each of the 450 Minuteman silos.

¹⁹⁰ Amy F. Woolf, *U.S. Strategic Nuclear Forces: Background, Developments, and Issues*, RL33640 (Washington, D.C.: Congressional Research Service, August 5, 2008), pp. 10-13.

¹⁹¹ *Department of Defense Annual Report to the President and the Congress* (1995), op. cit., p. 88.

¹⁹² *Ibid.*; and Adm. Richard W. Mies, USN, commander in chief, U.S. Strategic Command, in Senate Armed Services Committee, *Department of Defense Authorization for Appropriations for Fiscal Year 2002, Part 7*, S. Hrg. 107-335, Pt. 7, 107th Cong., 1st sess. (Washington, D.C.: GPO, 2002), p. 243.

¹⁹³ Deputy Under Secretary of Defense for Policy Adm. Daniel J. Murphy, USN (ret.), in Senate Armed Services Committee, *Department of Defense Authorization for Appropriations for Fiscal Year 1979, Part 9*, 95th Cong., 2d sess. (Washington, D.C.: GPO, 1978), p. 6402.

¹⁹⁴ *Report of the Defense Science Board Task Force on Nuclear Deterrence*, op. cit., p. 14.

¹⁹⁵ *Department of Defense Annual Report to the Congress for Fiscal Year 1989*, op. cit., p. 54.

¹⁹⁶ House Appropriations Committee, *Department of Defense Appropriations for 1968, Part 3*, 90th Cong., 1st sess. (Washington, D.C.: GPO, 1967), p. 49.

¹⁹⁷ *Department of Defense Annual Report for Fiscal Year 1981*, op. cit., p. 70; and *Department of Defense Annual Report for Fiscal Year 1980*, op. cit., p. 17.

¹⁹⁸ Jack W. Rosengren, *Some Little-Publicized Difficulties With a Nuclear Freeze*, RDA-TR-122116-001 (Marina del Rey, Calif.: R&D Associates, October 1983), pp. 13-20 (the quote is from p. 13). This report was prepared under contract for the Office of International Security Affairs in the Department of Energy. Rosengren was a former weapons designer at Lawrence Livermore National Laboratory. See also Walter Pincus, "Scientists Bare Warhead Duds on '60s Polaris," *Washington Post*, December 2, 1978, p. A1.

¹⁹⁹ *Department of Defense Annual Report to the President and the Congress* (1995), op. cit., p. 88.

²⁰⁰ *Department of Defense Annual Report for Fiscal Year 1981*, op. cit., p. 70.

²⁰¹ Department of Defense, *PRM/NSC-10 Military Strategy and Force Posture Review, Final Report*, op. cit., p. 35. See also *Report of the President's Commission on Strategic Forces* (Washington, D.C.: The White House, April 1983), pp. 7-8. This bipartisan commission was created by President Reagan to review

his strategic force modernization program, especially plans for the ICBM force. The commission was chaired by Brent Scowcroft and included among its members William Perry and R. James Woolsey (former under secretary of the Navy and later director of central intelligence). James Schlesinger served as one of the senior counselors to the commission.

²⁰² Draft Memorandum, subj: Recommended FY 1966-1970 Programs for Strategic Offensive Forces, Continental Air and Missile Defense Forces, and Civil Defense, op. cit., pp. 14-15.

²⁰³ *Department of Defense Annual Report for Fiscal Year 1979*, op. cit., p. 58.

²⁰⁴ Under Secretary of Defense for Research and Engineering Richard D. DeLauer, in House Armed Services Committee, *Department of Defense Authorization for Appropriations for Fiscal Year 1984, Part 5*, HASC No. 98-6, 98th Cong., 1st sess. (Washington, D.C.: GPO, 1983), p. 119.

²⁰⁵ *Department of Defense Annual Report for Fiscal Year 1981*, op. cit., p. 70.

²⁰⁶ For information on the evolution of U.S. nuclear attack options since the Kennedy administration, see Desmond Ball, "The Development of the SIOP, 1960-1983," in Desmond Ball and Jeffrey Richelson, eds., *Strategic Nuclear Targeting* (Ithaca, N.Y.: Cornell University Press, 1986), pp. 57-83; Leon Sloss and Marc Dean Millot, "U.S. Nuclear Strategy in Evolution," *Strategic Review*, vol. 12, no. 1 (Winter 1984), pp. 19-28 (Sloss directed the Carter administration's Nuclear Targeting Policy Review); May et al., *History of the Strategic Arms Competition, Part II*, op. cit., pp. 592, 596-600, 607, 804-805; General Accounting Office, *Strategic Weapons: Nuclear Weapons Targeting Process*, NSIAD-91-319FS (Washington, D.C.: General Accounting Office, September 1991), pp. 11-13; L. Wainstein et al., *The Evolution of U.S. Strategic Command and Control and Warning, 1945-1972*, S-467 (Arlington, Va.: Institute for Defense Analyses, June 1975) (Secret; declassified, September 1992), pp. 290-291, available at <http://www.dtic.mil>; Draft Memorandum from Secretary of Defense McNamara to President Johnson, subj: Recommended FY 1965-FY 1969 Strategic Retaliatory Forces, December 6, 1963 (Top Secret; declassified in part, January 5, 1983), pp. I-33—I-34, available at <http://www.dod.mil/pubs/foi/rdroom.html>; Draft Memorandum from Secretary of Defense McNamara to President Johnson, subj: Strategic Offensive and Defensive Forces, January 15, 1968 (revised) (Top Secret; declassified in part), pp. 6, 9, available at <http://www.dod.mil/pubs/foi/rdroom.html>; Draft Memorandum from Secretary of Defense Clark Clifford to President Johnson, subj: Strategic Offensive and Defensive Forces, January 9, 1969 (Top Secret; declassified in part), pp. 5, 6, 12, available at <http://www.dod.mil/pubs/foi/rdroom.html>; Terriff, *The Nixon Administration and the Making of U.S. Nuclear Strategy*, op. cit.; Burr, "The Nixon Administration, the 'Horror Strategy,' and the Search for Limited Nuclear Options," op. cit.; "'To Have the Only Option That of Killing 80 Million People is the Height of Immorality': The Nixon Administration, the SIOP, and the Search for Options, 1969-1974," op. cit.; Secretary of Defense James R. Schlesinger, in Senate Foreign Relations Committee, *U.S.-U.S.S.R. Strategic Policies*, 93d Cong., 2d sess. (Washington, D.C.: GPO, 1974); Schlesinger, in Senate Foreign Relations Committee, *Briefing on Counterforce Attacks*, 93d Cong., 2d sess. (Washington, D.C.: GPO, 1974); Brown, in Senate Foreign Relations Committee, *Nuclear War Strategy*, op. cit.; Odom, "The Origins and Design of Presidential Decision-59: A Memoir," op. cit.; Secretary of Defense Caspar Weinberger, in Senate Foreign Relations Committee, *U.S. Strategic Doctrine*, 97th Cong., 2d sess. (Washington, D.C.: GPO, 1983), pp. 18-20; *Department of Defense Annual Report to the Congress for Fiscal Year 1987*, op. cit., pp. 74-75; *Department of Defense Annual Report to the President and the Congress* (1991), op. cit., p. 51; R. Jeffrey Smith, "U.S. Trims List of Targets in Soviet Union," *Washington Post*, July 21, 1991, p. A1; Deputy Secretary of Defense John M. Deutch, in Senate Armed Services Committee, *Briefing on Results of the Nuclear Posture Review*, S. Hrg. 103-870, 93d Cong., 2d sess. (Washington, D.C.: GPO, 1994), p. 13; William S. Cohen, *Department of Defense Annual Report to the President and the Congress* (Washington, D.C.: GPO, 1998), p. 57; Smith, "Clinton Directive Changes Strategy On Nuclear Arms," op. cit.; *Department of Defense Annual Report to the President and the Congress* (2002), op. cit., pp. 84, 85, 87; Green, remarks at the 36th Annual Institute for Foreign Policy Analysis-Fletcher Conference on National Security Policy, op. cit; and Secretary of Energy Samuel W. Bodman and Secretary of Defense Robert M. Gates, "National Security and Nuclear Weapons in the 21st Century," joint statement, September 2008, p. 13.

²⁰⁷ "C⁴ISR" refers to "command, control, communications, computers, intelligence, surveillance, and reconnaissance."

²⁰⁸ *Department of Defense Annual Report for Fiscal Year 1982*, op. cit., p. 40.

²⁰⁹ For unclassified estimates of launcher and warhead numbers, see Natural Resources Defense Council Nuclear Program, "Table of US Strategic Offensive Force Loadings, 1945-2012," November 25, 2002, available at <http://www.nrdc.org/nuclear/nudb/datab1.asp>; and Robert S. Norris and Hans M. Kristensen, "U.S. Nuclear Forces, 2008," *Bulletin of the Atomic Scientists*, vol. 64, no. 1 (March/April 2008), p. 52.

²¹⁰ Maj. Gen. Polly A. Peyer, USAF, Chair, *Air Force Blue Ribbon Review of Nuclear Weapons Policies and Procedures* (Washington, D.C.: Headquarters U.S. Air Force, February 8, 2008), pp. 15-17, 32-33, 35, 37, 43, 63, 64, available at <http://www.fas.org/nuke/guide/usa/doctrine/usaf/BRR-2008.pdf>.

²¹¹ See Rumsfeld, Foreword to the Nuclear Posture Review Report, op. cit.; *Department of Defense Annual Report to the President and the Congress* (2002), op. cit., Chapter 7; and Feith, in Senate Armed Services Committee, *Department of Defense Authorization for Appropriations for Fiscal Year 2003, Part 1*, op. cit.

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