

UNDERSTANDING AMERICAN NUCLEAR WEAPONS POLICY AND STRATEGY

**A CITIZEN'S GUIDE TO THE NUCLEAR POSTURE REVIEW AND THE ROLE OF
NUCLEAR WEAPONS IN THE 21ST CENTURY**

By:
David Trachtenberg
Peter Pry

Foreword By:
Congressman Curt Weldon
Vice Chairman, House Armed Services Committee



© United States Nuclear Strategy Forum, 2005
Washington, DC

The views expressed in this publication are those of the author(s) and do not reflect the official policy or position of the Department of Defense, the U.S. Government, or other members of the United States Nuclear Strategy Forum.

Publication No. 0001

About the United States Nuclear Strategy Forum

The United States Nuclear Strategy Forum has been established for the purpose of contributing to a better understanding in Congress and by the interested public of the rationale, purposes, and directions in U.S. strategic policy introduced by the 2001 Nuclear Posture Review and subsequent Department of Defense and White House initiatives.

As part of its educational agenda, the U.S. Nuclear Strategy Forum will examine and report on the spectrum of issues associated with the implementation of the NPR, including its implementation under a range of possible future political-military contexts and conditions.

The Forum shall be available to the Congress for hearings and briefings, as requested. It shall provide a means for the Congress to be advised by those who have experience establishing and articulating U.S. strategic policy and managing U.S. weapons and strategy.

Finally, the United States Nuclear Strategy Forum will seek to provide the means for cross-fertilization between generations of strategic force and policy experts, including those who guided the West successfully through the Cold War, and those who will inherit this legacy.

*Congressman Curt Weldon
Vice Chairman
House Armed Services Committee*

Executive Summary

For more than four decades during the Cold War, U.S. nuclear weapons served as the ultimate deterrent to Soviet attack on the U.S. homeland, invasion of Western Europe, and significant challenges to American national security interests worldwide.

Since the end of the Cold War and the demise of the Soviet Union, the role of nuclear weapons in U.S. national security strategy has lost its preeminence and their *raison d'être* has become less well understood by key leaders and decision makers and the public at large.

At congressional direction, the Bush Administration in 2001 conducted a fundamental reassessment of U.S. nuclear strategy and force posture in an effort to reconcile U.S. nuclear forces to the needs and challenges of the post-Cold War contemporary security environment. The results of this reassessment became known as the “Nuclear Posture Review” (NPR).

The NPR concluded that the global security environment has been significantly transformed since the end of the Cold War. For example, Russia is no longer an enemy of the United States and does not pose an immediate threat. The future U.S. relationship with China is uncertain. However China is carrying out a significant military modernization program and Taiwan remains a flash point. Rogue states possess or seek nuclear, chemical, and biological weapons of mass destruction (WMD) to threaten their neighbors and deter the United States from engaging regionally to protect vital U.S. interests. WMD and delivery systems are proliferating globally. Terrorist groups also seek these deadly weapons to threaten or to inflict massive casualties on those who will not accede to their demands.

Uncertainty is the hallmark of this new strategic environment. Five years ago, no one could have predicted that the World Trade Center and the Pentagon would be targets of a successful terrorist attack. Nor would anyone have speculated that American combat forces would be in Afghanistan and Iraq. The NPR implicitly recognized that, while new challenges to U.S. nuclear deterrence could emerge quickly and unexpectedly, adapting the U.S. nuclear stockpile to meet new challenges would require years, even decades.

Because of these new realities, U.S. strategic capabilities must be transformed. American military forces must possess capabilities that provide greater options and flexibility to successfully address new and dynamic threats. Deterrence of rogue states armed with WMD is important, but increasingly uncertain with our current arsenal, which was designed primarily for deterrence of an all-out nuclear attack by the Soviet Union.

Reliance on U.S. nuclear capabilities for deterrence remains necessary, but may not be sufficient in all cases. For this reason, in addition to nuclear strike capabilities, the NPR concluded that a broader range of strategic capabilities is necessary. This broader range of capabilities is represented by the “New Triad.”

The New Triad of strategic capabilities calls for developing a more balanced and appropriate mix of nuclear and advanced non-nuclear strike capabilities; missile defenses to augment deterrence and reduce reliance on nuclear weapons; and a revitalized defense research and development and industrial infrastructure so that U.S. forces can adapt quickly to evolving threats. These capabilities would be strengthened by improved intelligence, more robust command and control, and adaptive planning measures to enhance the utility of the new military capabilities of the New Triad.

While seeking to reduce the Cold War-era reliance on nuclear weapons for deterrence, the NPR also noted that nuclear weapons remain vital to U.S. national security. Without a nuclear arsenal the United States would be vulnerable to an existing nuclear-armed hostile power, in addition to emerging or resurgent hostile powers possessing substantial conventional and chemical, biological, or nuclear forces capable of causing unimaginable damage and destruction to the United States. Rogue states with WMD could seek to coerce the United States from engaging in key regions in support of allies or friends. Moreover, allies and friends of the United States that have come to rely on the U.S. “nuclear umbrella” as the ultimate guarantor of their own security would have increased incentives to acquire their own nuclear arsenals, further complicating the proliferation problem.

U.S. non-nuclear strike capabilities cannot currently hold at risk the full range of current hardened facilities and deeply buried targets, and probably will be unable to hold at risk future hard targets being built by potential adversaries. Therefore, U.S. non-nuclear strike capabilities are not sufficiently credible in all cases to deter WMD-armed enemies or to assure allies.

Consequently, nuclear weapons remain essential for U.S. national security. However, the United States is seeking to reduce its nuclear arsenal to the lowest level consistent with U.S. national security and U.S. security commitments to friends and allies. Contemporary thinking about national security requirements also suggests that a smaller nuclear arsenal, shaped to counter new or emerging threats, and able to greatly reduce or eliminate civilian casualties, would be more credible than today’s Cold War-era nuclear arsenal for addressing present and future security challenges. This may require development and fielding of nuclear weapons with lower yields, greater accuracy, earth penetration capability, and enhanced security and control.

With this in mind, and in recognition of the new strategic relationship that exists today with Russia, the United States is reducing the number of its operationally deployed nuclear weapons significantly and is also considerably reducing its total nuclear

stockpile. The NPR laid the foundation for President Bush's decision, codified in the Moscow Treaty of 2002, to reduce operationally deployed U.S. nuclear weapons from nearly 6,000 in 2001 to 1,700-2,200 by the end of 2012. This level was deemed sufficient for continued deterrence and to meet immediate or unexpected threats. While reductions occur, the United States will maintain a responsive capability to deal with new or resurgent threats. This means that some weapons will be maintained in reserve, as a hedge against unforeseen developments. As the capabilities of the New Triad come to fruition, additional reductions in the U.S. nuclear arsenal may be possible.

The NPR envisions that a part of the U.S. Cold War arsenal of nuclear weapons will be retained to deter some adversaries, dissuade challengers, and assure allies. However, it also envisions that a portion of the downsized U.S. arsenal will be transformed to strengthen and make more credible U.S. deterrence capabilities. This can be accomplished through the development of weapons with more tailored and precise effects.

Although the NPR was developed four years ago, its rationale and conclusions remain relevant today. Moreover, the force posture enhancements recommended by the NPR will likely require years, if not decades, to achieve. The future course of American nuclear weapons policy—including the level and structure of nuclear forces required to deal with the national security challenges of the 21st century—may be addressed by the Department of Defense as it assesses overall military requirements in the Quadrennial Defense Review currently underway.

The decisions that flow from this review cannot be enacted by only one branch of government. The Executive and Legislative Branches working together must credibly explain to the American people the reasons behind these decisions. It is hoped that this primer will contribute to public understanding of the vital role nuclear weapons continue to play in ensuring American security.

*Congressman Curt Weldon
Vice Chairman
House Armed Services Committee*

Table of Contents

INTRODUCTION.....	1
Why this primer?	1
GENERAL BACKGROUND	1
What is the “Nuclear Posture Review?”	1
Why was the NPR done?	2
What were the NPR’s main conclusions?	2
How does the NPR support national policy?	4
Is the NPR a “new” nuclear doctrine that departs radically from past nuclear doctrine?	5
Does the NPR support nuclear preemption?	6
Where can one find additional information on the NPR?	6
THE FUTURE SECURITY ENVIRONMENT	8
How does the NPR characterize the future security environment?	8
What is the difference between “immediate,” “potential,” and “unexpected” threats?	8
How does the NPR approach Russia?	9
How does the NPR approach China?	9
THE ROLE OF NUCLEAR WEAPONS	10
Are nuclear weapons immoral?	10
What role do nuclear weapons serve in the post-Cold War environment?.....	11
Doesn’t terrorism pose the greatest threat to American security today? How can nuclear weapons protect us against terrorist attack?	12
Does the NPR call for development of new nuclear weapons, including low-yield nuclear weapons?	13
Does the NPR call for greater reliance on nuclear weapons, and thereby lower the threshold for nuclear use?.....	14
Does the NPR support arms control and reductions in the number of U.S. nuclear weapons?	15
Does the NPR support the use of nuclear weapons against non-nuclear threats, such as chemical or biological weapons?	15

Is there a difference between nuclear and non-nuclear strike capabilities, or does the NPR see them as part of a continuum?	16
Does the NPR support a resumption of nuclear testing?	16
Would U.S. nuclear modernization fuel nuclear proliferation?	18
THE NEW TRIAD.....	19
What is the “New Triad” and how it is different from the traditional nuclear Triad?.....	19
What role do missile defenses play in the NPR?	20
What is the status of the U.S. industrial base for manufacturing nuclear weapons?	20
IMPLEMENTING THE NPR	22
How long will it take to implement the NPR?	22
How is progress toward achieving the NPR’s goals to be assessed?.....	22
APPENDIX.....	A-1
Section 1041 of the Floyd D. Spence National Defense Authorization Act for Fiscal Year 2001 (Public Law 106-398, as amended)	A-1

Introduction

Why This Primer?

Many in the general public, and even among responsible policymakers in Congress and elsewhere, do not understand the direction, rationale, or purposes of United States nuclear strategy. Indeed, some in the media and among activist groups have, through ignorance or political motives, misunderstood or misrepresented and distorted the direction, rationale, and purposes of U.S. policy toward nuclear weapons, especially as embodied in the 2001 Nuclear Posture Review (NPR).

This is a primer on American nuclear strategy and the Nuclear Posture Review. It is designed to make accessible and understandable to the layperson the evolving United States policy on nuclear weapons.

The Department of Defense has primary responsibility for ensuring the national security of the United States. Through several presidential administrations, U.S. nuclear strategy has been adjusted and adapted to meet the requirements of the time. However, the reasons behind many of these adjustments have not been well understood by the general public. This is also true of the most recent change to nuclear strategy reflected in the 2001 Nuclear Posture Review.

It is hoped that this primer will “de-mystify” the issues surrounding American nuclear policy and strategy, as well as clarify the important role that nuclear weapons continue to play in helping America achieve a peaceful, safe, and prosperous world.

General Background

What is the “Nuclear Posture Review?”

The Nuclear Posture Review (NPR) was an effort undertaken by the Department of Defense to review U.S. nuclear strategy and forces in order to ensure that U.S. nuclear capabilities are appropriate to the anticipated threats and challenges of the 21st century.

The NPR was conducted in 2001 and is significantly more detailed and comprehensive than an earlier nuclear posture review conducted by the Department of Defense in 1994. Unfortunately, the NPR remains classified. This has contributed to the difficulty of ensuring the widest possible public understanding of its rationale and conclusions. In addition, the classified nature of the NPR has fostered suspicion and numerous misconceptions regarding its implications for U.S. nuclear policy, as well as inaccurate assertions regarding the Bush administration's views on nuclear weapons and nuclear war.

This primer, "Understanding American Nuclear Policy and Strategy: A Citizen's Guide to the Nuclear Posture Review and the Role of Nuclear Weapons in the 21st Century," is intended to clarify—in an unclassified and "jargon-free" format—the role of nuclear weapons in U.S. national security strategy today and to correct many of the misconceptions that surround the NPR.

Why was the NPR done?

Significant changes in the post-Cold War security environment, including an improving relationship with Russia, continued to raise questions in the minds of some about the relevance of the Cold War level of nuclear weapons in the U.S. arsenal. A change in administrations was also seen as an appropriate time to review and reassess U.S. nuclear weapons policy and posture.

The NPR was a congressionally-mandated review. The Floyd D. Spence National Defense Authorization Act for Fiscal Year 2001 (Public Law 106-398, as amended) required a comprehensive review of U.S. nuclear posture to be conducted by the Secretary of Defense in consultation with the Secretary of Energy.

In its report on the Fiscal Year 2001 National Defense Authorization Bill, the Senate Armed Services Committee noted that "there has not been an end-to-end review of U.S. nuclear weapons strategy, requirements, and posture since fiscal year 1994" and expressed the view that such a review was long overdue. The review was to look out five to ten years and consider, among other things, the appropriate role of nuclear weapons; the requirements for maintaining a safe and effective nuclear deterrent; the relationship between nuclear deterrence and arms control; and the appropriate size and composition of U.S. nuclear forces.

The full text of the legislative language establishing the requirement for the NPR (Section 1041 of Public Law 106-398) can be found in the Appendix to this report.

What were the NPR's main conclusions?

The Nuclear Posture Review concluded that the global security environment has been significantly transformed since the end of the Cold War. For example, Russia is no

longer an enemy of the United States and does not pose an immediate threat. Therefore, as Secretary of Defense Donald Rumsfeld stated in his cover letter transmitting the NPR to Congress, “the U.S. will no longer plan, size or sustain its forces as though Russia presented merely a smaller version of the threat posed by the former Soviet Union.” Nevertheless, the NPR recognized that the strategic environment could change quickly and dramatically, and that other threats exist. The future U.S. relationship with China is uncertain. However, China is engaged in a significant military modernization program and Taiwan remains a flash point. And rogue states seek weapons of mass destruction (WMD) to threaten their neighbors and deter the United States from engaging regionally to protect vital U.S. interests.

The NPR called for transforming U.S. strategic capabilities to deal with these new realities. It assessed deterrence of rogue states armed with WMD to be important, but increasingly difficult to achieve with certainty. It concluded that reliance on U.S. nuclear capabilities for deterrence remained necessary, but that nuclear deterrence might not be sufficient in all cases. As Secretary of Defense Rumsfeld noted, “a strategic posture that relies solely on offensive nuclear forces is inappropriate for deterring the potential adversaries we will face in the 21st century.” For this reason, in addition to nuclear strike capabilities, the NPR concluded that a broader range of strategic capabilities was necessary. This broader range of capabilities is represented by the “New Triad.”

The New Triad of strategic capabilities—unlike the “old” Cold War Triad, which relied exclusively on ground- and sea-based nuclear weapons—includes nuclear and advanced non-nuclear strike capabilities; missile defenses to augment deterrence and reduce reliance on nuclear weapons; and a revitalized defense research and development and industrial infrastructure so that U.S. forces can adapt quickly to evolving threats. These capabilities would be strengthened by improved intelligence, more robust command and control, and adaptive planning measures to enhance the utility of the new military capabilities of the New Triad.

While seeking to reduce the Cold War-era reliance on nuclear weapons for deterrence, the NPR also noted that nuclear weapons remain vital to U.S. national security. Without a nuclear arsenal the United States would be vulnerable to an existing nuclear-armed hostile power, in addition to emerging or resurgent hostile powers possessing substantial conventional, chemical, biological, or nuclear forces capable of causing unimaginable damage and destruction to the United States. Lesser or rogue states with WMD could seek to coerce the United States from engaging in key regions in support of allies or friends. Moreover, allies and friends of the United States that have come to rely on the U.S. “nuclear umbrella” as the ultimate guarantor of their own security would have increased incentives to acquire their own nuclear arsenals, further complicating the proliferation problem.

The NPR recognized that non-nuclear strike capabilities cannot currently hold at risk the full range of facilities and targets of most value to potential adversaries. Rogue states

and others are constructing ever harder and more secure facilities, including for protecting their weapons of mass destruction. Therefore, U.S. non-nuclear strike capabilities are not sufficiently credible in all cases to deter WMD-armed enemies or to assure allies.

Consequently, the NPR concluded that nuclear weapons remain essential for U.S. national security. However, it also concluded that a smaller nuclear arsenal, tailored with more discriminate capabilities designed to counter new or emerging threats, would be more appropriate than today's large and indiscriminate Cold War-era nuclear arsenal for addressing contemporary security challenges. This may require development and fielding of weapons with lower yields, greater accuracy, earth penetration capability, and enhanced security and control.

With this in mind, and in recognition of the changed strategic relationship with Russia, the NPR laid the foundation for President Bush's decision, codified in the Moscow Treaty of 2002, to reduce operationally deployed U.S. strategic nuclear weapons from nearly 6,000 in 2001 to 1,700-2,200 by the end of 2012. This level was deemed sufficient for continued deterrence and to respond to immediate or unanticipated threats. At the same time, the NPR called for maintenance of a responsive capability to deal with new or resurgent threats. As the capabilities of the New Triad come to fruition, the NPR postulated that additional reductions in the U.S. nuclear arsenal might be possible.

How does the NPR support national policy?

U.S. national security policy is guided by a desire to encourage a strategic environment favorable to U.S. interests; prevent conflict that threatens U.S. interests, friends and allies abroad, or the security of Americans; and defeat any challenges to the exercise of American power in defense of U.S. interests.

The NPR supports national policy by:

- recognizing that the strategic environment has changed dramatically since the end of the Cold War and that the U.S. nuclear arsenal must also change as a consequence of this reality;
- understanding that Russia is no longer an enemy of the United States;
- ensuring that changes to the U.S. strategic nuclear posture are not irreversible should an unforeseen deterioration in the security environment occur;
- proposing to reduce U.S. strategic nuclear weapons to the lowest levels consistent with U.S. national security, as well as the security of U.S. friends and allies;
- advocating development of advanced non-nuclear capabilities that could allow a reduced emphasis on nuclear deterrence;

- supporting the deployment of missile defenses, to protect against the failure of deterrence;
- focusing attention on the importance of reversing the decline in nuclear weapons infrastructure so that timely capability improvements could take place if needed;
- calling for improved intelligence, planning, and command and control capabilities; and
- seeking to maximize U.S. flexibility by broadening the options available to the President in the employment of armed force against contemporary security threats.

The NPR also supports defense planning by recognizing the role nuclear weapons can play in assuring friends and allies of the U.S. commitment to their security and lessening pressures for them to develop their own nuclear arsenals; dissuading potential adversaries from seeking to challenge the United States asymmetrically or with the development of their own nuclear arsenals; deterring enemies from attacking the United States, its deployed forces abroad, or its friends and allies; and defeating attack through a more discriminate—and thus more credible—set of nuclear options, should alternative means not be possible.

Is the NPR a “new” nuclear doctrine that departs radically from past nuclear doctrine?

Over the past 60 years, nuclear weapons have played an important role in ensuring the safety and security of Americans. As the ultimate guarantor of U.S. national security, they helped ensure a nuclear standoff between the United States and the Soviet Union during the Cold War, kept the massive Red Army from invading Western Europe with its superior conventional forces, and prevented minor conflicts among regional powers from drawing the two superpowers into major direct armed confrontation.

U.S. nuclear doctrine has shifted over the years to adjust for the growth of Soviet nuclear power, the development of smaller, lower-yield nuclear weapons, and the proliferation of nuclear weapons technologies. However, nuclear weapons have always been seen as essential to American security. They have also always been considered weapons of last resort. These fundamental beliefs have not changed as a result of the Nuclear Posture Review.

The NPR does not represent a radically new nuclear doctrine. What is “radical,” if anything, about the NPR, is that it focuses attention for the first time in many years on the requirement to tailor U.S. nuclear forces in ways that are appropriate to the challenges of the 21st century and it recognizes contributions made by capabilities other than nuclear strike forces to America’s strategic deterrent strategy.

With the demise of the Soviet Union, some believed that the United States could safely ignore nuclear weapons issues and not bother any more with considerations relating to the size and composition of U.S. nuclear forces. The NPR explains why this is not the case. As long as nuclear weapons remain important for U.S. security, it is imperative that the United States ensures it has the right mix and capabilities in its arsenal to implement effectively its national security strategy. The NPR is a healthy contribution to the debate over an appropriate nuclear posture for the United States today.

Does the NPR support nuclear preemption?

The issue of preemption is one of the most misunderstood issues in the nuclear debate. Contrary to some assertions, the Nuclear Posture Review does not call for a policy of nuclear preemption.

Allowing for the option of a preventive or preemptive attack has long been a staple of American defense strategy. Every President reserves the right to undertake preemptive military action if the risks of delaying such action may result in even greater threats to U.S. security or a greater number of casualties.

The terrorist attacks of September 11, 2001, drove home the dangers of waiting to act against threats to the United States until it is too late. That tragic day demonstrated that some who oppose the United States and the principles on which it stands will look for ways to strike Americans, even at home, and even if it means sacrificing their own life.

Against these types of threats, traditional nuclear deterrence may have little effect. Hence, the NPR's call for a broader range of capabilities that could provide an American President with an expanded array of options to defeat threats before they emerge. Nuclear weapons may or may not be part of the suite of capabilities used to counter threats preemptively. However, the decision to use a nuclear weapon is fundamentally different than the decision to use any other weapon.

There remains a clear line of demarcation between nuclear and non-nuclear weapons. In particular, the political implications and ramifications of nuclear vis-à-vis non-nuclear weapons use are significantly different. The President of the United States is the only person authorized to direct the use of nuclear weapons. The reasons for this are well-understood and the NPR did not recommend any change in the way decisions regarding the employment of nuclear weapons are made. No such presidential decision would be taken lightly.

Where can one find additional information on the NPR?

Because the Nuclear Posture Review remains classified, additional authoritative information on its findings and conclusions is not easily obtained. However, there are a

variety of sources that would be useful for persons interested in learning more about the NPR.

The only officially unclassified version of the NPR is a chapter in the 2002 *Annual Report to the President and the Congress* of the Secretary of Defense. Chapter 7, "Adapting U.S. Strategic Forces," discusses the concept and elements of the New Triad and the implications of this for further reductions in strategic nuclear weapons. This chapter also explains the NPR's framework for categorizing security threats and how U.S. nuclear forces should be sized to deal with these threats.

Another official source of information is the on-the-record press briefing on the NPR given by J.D. Crouch, II, then-Assistant Secretary of Defense for International Security Policy, on January 9, 2002. Participating with Secretary Crouch were Rear Adm. Barry M. Costello, Deputy Director for Strategy and Policy, Joint Staff; John Harvey, Director, Office of Policy, Planning, Assessment and Analysis, Department of Energy; and Richard McGraw, Principal Deputy Assistant Secretary of Defense for Public Affairs. A transcript of the briefing is available on the internet at the following web address: http://www.defenselink.mil/transcripts/2002/t01092002_t0109npr.html. A copy of the briefing slides used in the presentation is also available at: <http://www.defenselink.mil/news/Jan2002/g020109-D-6570C.html>.

In addition, the unclassified "Foreword" to the NPR, transmitted as a cover letter to Congress by the Secretary of Defense, briefly outlines the major conclusions of the NPR. It is also available on the internet at the following web address: <http://www.defenselink.mil/news/Jan2002/d20020109npr.pdf>.

Finally, testimony on the NPR by Douglas J. Feith, Under Secretary of Defense for Policy, John A. Gordon, Administrator of the National Nuclear Security Administration, and Adm. James O. Ellis, USN, Commander in Chief, Strategic Command, was given before the Senate Armed Services Committee on February 14, 2002. It may be accessed at http://www.senate.gov/~armed_services.

Excellent, yet unofficial, sources of detailed information on the NPR and the New Triad can be found in a lengthy 2005 article by Keith B. Payne, "The Nuclear Posture Review: Setting the Record Straight," *Washington Quarterly*, Vol. 28, No. 3 (Summer 2005), available at, www.twq.com; and ,in a 2002 monograph by Kurt Guthe of the National Institute for Public Policy. The monograph, entitled, "The Nuclear Posture Review: How Is the 'New Triad' New?," is available at: http://www.csbaonline.org/4Publications/Archive/R.20020729.Nuclear_Posture_Review/R.20020729.Nuclear_Posture_Review.pdf.

A classified version of the NPR was purportedly leaked to the *Los Angeles Times* and published in 2002; however, its authenticity was never confirmed by the Department of Defense.

The Future Security Environment

How does the NPR characterize the future security environment?

The Nuclear Posture Review attempted to look out and assess the security environment in the next five to ten years. This task was not easy, as it is always difficult to predict the future with any degree of confidence. The dynamic state of world affairs is a constant source of unexpected surprises. For example, five years ago, no one would have suspected that the United States would today have combat troops in Afghanistan or Iraq. The NPR recognized implicitly that, while challenges to U.S. nuclear deterrence could emerge quickly and unexpectedly, adapting the U.S. nuclear stockpile to meet new challenges could require years, even decades.

Recognizing this uncertainty, the NPR characterized the future security environment in terms of the types of threats the United States is likely to confront. Specifically, the NPR grouped these threats into three categories: *immediate*; *potential*; and *unexpected*. The differences between these groupings are explained below.

What is the difference between “immediate,” “potential,” and “unexpected” threats?

According to the NPR, “immediate” threats are those that involve well-recognized and current dangers. The Soviet Union posed an immediate threat to the United States and Western Europe during the Cold War. Today, an impending attack on American forces abroad or a friend or ally overseas by an adversary using weapons of mass destruction could represent an immediate threat.

The NPR defined a “potential” threat as one in which the danger posed is plausible, but not immediate. The United States may be able to anticipate the emergence of this type of threat. For example, it may be possible to receive timely warning of the emergence of a hostile country or coalition armed with weapons of mass destruction. Another type of potential threat would be the emergence or re-emergence of a major power competitor.

“Unexpected” threats are security dangers that emerge suddenly and without timely warning. They are unpredicted events that could occur quickly or after the passage of time. An example of this type of threat would be the overthrow of a friendly country’s government by a regime hostile to the United States. Another example would be the surprise acquisition by an adversary of nuclear, chemical, or biological weapons.

How does the NPR approach Russia?

The NPR recognizes that Russia is no longer an enemy of the United States. Therefore, Russia is not considered to be an “immediate” threat. In the Foreword to the NPR, Secretary of Defense Rumsfeld stated that “the U.S. will no longer plan, size or sustain its forces as though Russia presented merely a smaller version of the threat posed by the former Soviet Union.”

In fact, the NPR acknowledges that the improved relationship with Russia allows the United States to reduce significantly its level of deployed strategic nuclear weapons. Consequently, it proposed a reduction of approximately two-thirds in the number of operationally deployed strategic nuclear weapons. This significant reduction was codified in the 2002 Moscow Treaty, signed by Presidents Bush and Putin.

The United States is currently in the process of drawing down its strategic nuclear forces in accordance with the Moscow Treaty. By the end of 2012, the United States will have reduced its strategic nuclear weapons from roughly 6,000 in 2001 to 1,700-2,200.

However, the NPR recognizes that the future is uncertain and can change suddenly. As a hedge against unforeseen changes in the security environment, some of these withdrawn weapons will remain as part of a strategic reserve in the nuclear stockpile. The decision to maintain these weapons in reserve has been criticized by some as inconsistent with the principle of weapons reductions. However, the NPR recognized that the world situation can change quickly and without warning. It proposed a prudent course of action that would ensure decisions made are not irrevocable.

Even with the existence of a strategic weapons reserve, the size of the U.S. nuclear weapon stockpile will continue to decline. In May 2004, President Bush approved a nearly 50 percent reduction in the current size of the stockpile. By 2012, the size of the nuclear stockpile will be the smallest in many decades.

How does the NPR approach China?

The U.S. relationship with China has undergone various twists and turns over the years. China’s communist form of government has made it an ideological opponent of the United States in many respects. China is steadily modernizing its military and its threats to use military force against Taiwan as a means of reunification with the mainland have raised concerns over the potential for drawing the United States into a direct conflict with China. In 1996, President Clinton ordered two U.S. carrier battle groups into the South China Sea in a military display of solidarity with Taiwan after China launched ballistic missiles on trajectories that bracketed the island. Relations with China were strained further when the United States accidentally bombed the Chinese Embassy in

Belgrade during the Kosovo conflict in 1999. In 2001, a Chinese fighter pilot intercepted an American military aircraft in international airspace over the South China Sea, forcing it to make an emergency landing on China's Hainan Island. China detained the aircrew for 11 days, sparking another diplomatic crisis.

Despite these challenges, the United States has also sought to work constructively with China on a variety of regional and global security issues. For example, China has recently been a participant in the "six-party talks" involving North Korea's nuclear program. In addition, the United States has sought to foster Chinese cooperation in stemming the proliferation of dangerous weapons of mass destruction technologies. The United States is also seeking to resume high-level military-to-military dialogue with China.

The Role of Nuclear Weapons

Are nuclear weapons immoral?

It is often argued that nuclear weapons, like chemical and biological weapons of mass destruction, violate the Judeo-Christian tradition and theory of "Just War." In this view, the destructive power of nuclear weapons is so great that they cannot be employed without inflicting harm to non-combatants disproportional to any acceptable goals. The Cold War discussion of morality and nuclear weapons focused on the Cold War potential for nuclear escalation following any initial employment: even if an initial nuclear strike were limited to a remote military target, the prospects for uncontrolled nuclear escalation in any U.S.-Soviet conflict meant that the level of harm to civilians would likely be disproportional.

Yet, the Cold War is over, the Soviet Union no longer exists, and the United States confronts a variety of threats far different from that of the Cold War. It should be recalled in this regard that President Truman's decision in 1945 to employ atomic weapons to end the war with Japan almost certainly saved far more lives than otherwise would have been lost by precluding the need for an invasion of the Japanese home islands. An invasion to end that war would have cost an estimated 500,000 American casualties and over one million Japanese casualties. And those estimated losses probably were conservative. At the time, few Americans considered the use of the atomic bomb to end World War II as immoral. Today, half a century later, most Americans still believe President Truman did the right thing, because the atomic bombings saved over a million American and Japanese lives.

In addition, as the NPR emphasized, nuclear weapons provide great value without being employed: their greatest “use” has been in not being employed. Historically, that use has been in deterrence. During the Korean War, for example, President Eisenhower used the deterrent threat of tactical nuclear weapons to lead North Korea to agree to an armistice, ending a bloody conflict that cost some 40,000 American lives and over one million Korean and Chinese lives. After World War II, for nearly half a century nuclear weapons helped deter the Soviet Union from assaulting the West militarily. The USSR’s vast preponderance in tanks, aircraft and other conventional forces was never used to defeat of the West—despite extreme self-expressed Soviet hostility and numerous international crises—thanks no doubt to the deterring effect of U.S. nuclear weapons.

In the contemporary, post-Cold War era, the value of nuclear deterrence to preclude the resort to war is no less. In fact, the proliferation of WMD to an increasing number of lawless and hostile states has created the need for a credible, effective deterrent across a broader range of potential opponents and contingencies. In some particularly challenging cases, U.S. nuclear capabilities will be necessary to lead opponents away from war as they did during the Cold War; not through their employment, but by their deterring effect. One of the NPR’s fundamental objectives is to strengthen deterrence in this unprecedented strategic environment, and in doing so, to extend the peace and security enjoyed by the West for fifty years.

What role do nuclear weapons serve in the post-Cold War environment?

The Bush Administration, as in previous Administrations, including the Clinton Administration, judges that nuclear weapons continue to be essential to U.S. security, and to the security of U.S. friends and allies. Nuclear weapons are the only instruments that can hold the full range of targets valued by an adversary at risk. Consequently, nuclear weapons still serve an important role in U.S. strategy.

Nuclear weapons exist and the knowledge to make them cannot be abolished. That knowledge and the technological wherewithal to manufacture nuclear weapons is increasingly widespread. Nuclear weapons are valued both for their strategic utility and as symbols of national status and power.

Some nuclear aspirant nations see nuclear weapons as a means of “leveling” the military and diplomatic playing field with the United States. Other nations seek nuclear weapons in order to widen their own options for actions that challenge the United States, while deterring the U.S. from responding. Still other actors view nuclear weapons as a threat too difficult for the U.S. to defend against. The hostility of some actors toward the West is so great that they would likely use nuclear weapons, heedless of the consequences. If the U.S. abolishes its own nuclear weapons, this would spur potential enemies to develop nuclear weapons so they could threaten the United States and its allies. A U.S. bereft of nuclear weapons, instead of emulating imitation, would

more likely drive allies to develop their own nuclear weapons to replace the lost security previously provided by the United States. Nuclear proliferation, whether by friend or foe, is contrary to the vital interests of the United States.

The Bush Administration, in its presentation before the Senate Armed Services Committee on February 14, 2002, described the results of the Nuclear Posture Review. The NPR found that nuclear weapons, along with other elements of U.S. military power, including missile defenses, serve several critical purposes in the post-Cold War environment. Nuclear weapons:

- *Deter* potential enemies by the capability to retaliate with an unacceptable amount of damage in response to an adversary's attack;
- *Assure* allies and friends of the commitment by the United States to their security through an extended deterrent;
- *Dissuade* potential enemies from confronting the United States with nuclear weapons or "asymmetrical threats" by convincing them that they can never neutralize the U.S. nuclear deterrent; and
- *Defeat* enemies by holding at risk or destroying those targets that could not be neutralized by non-nuclear weapons.

Thus, nuclear weapons serve multiple goals of defense policy that are key to U.S. national security in peacetime as well as in crisis or war.

Doesn't terrorism pose the greatest threat to American security today? How can nuclear weapons protect us against terrorist attack?

Those who are willing to commit suicide in the name of religious fundamentalist extremism are unlikely to be deterred by any weapons we possess. All the tanks in the world would not have prevented the deadly terrorist attacks of September 11, 2001. But that does not mean that the United States Army does not need tanks.

In an age where terrorist groups would like nothing more than to acquire weapons of mass destruction, including nuclear weapons, the United States cannot afford to cede this capability unilaterally to those who might use weapons of mass destruction against us.

Nuclear weapons are a potent symbol of American military power. Though our current nuclear stockpile is ill suited for use against individual terrorists or terrorist groups, and may not by itself deter terrorist attacks, American nuclear potential nevertheless remains an important factor in influencing the behavior of states, including those that sponsor terrorism or harbor terrorists. The *National Strategy for Combating Terrorism* emphasizes that states which sponsor, support, or provide sanctuary to terrorists "will be held accountable for the actions of their 'guests.'" Nuclear weapons are one of the

many instruments of national power that can be brought to bear to influence the actions of others in ways that benefit U.S. interests, including in the global war on terror.

Does the NPR call for the development of new nuclear weapons, including low-yield nuclear weapons?

The United States has not in many years designed, developed, or deployed any new nuclear weapons. Consequently, the Bush Administration, following the recommendation of the NPR, has promised to rebuild the deteriorating U.S. nuclear weapons infrastructure that continues to decline steeply. The Bush Administration also pledged to finance research—but not the actual construction—of new types of nuclear weapons, as part of the U.S. effort to understand and to deter potential new threats in the future.

The capability of the United States to develop new nuclear weapons has declined markedly since the end of the Cold War. The scientific, technical, and engineering workforce that created the U.S. nuclear weapons that deterred a nuclear World War III with the former Soviet Union has largely disappeared. Similarly, the industrial infrastructure for producing, fabricating, and maintaining specialized materials and components for nuclear weapons has withered away. Until recently, the United States was unable to produce new tritium, an essential fuel for nuclear weapons. Today, the United States can only produce a few of the plutonium pits necessary for a nuclear explosion. Serious questions have been raised about whether the United States can even maintain its current inventory of aging nuclear weapons inherited from the Cold War, let alone develop new nuclear weapons.

In contrast, rogue states seeking to acquire nuclear weapons illegally, and India, Pakistan, China, and Russia, have maintained or improved their nuclear weapon infrastructures and continued their nuclear weapon development programs, making great progress. According to Russian open source military writings, Russian nuclear scientists have made technological advances in small battlefield nuclear weapons and in other advanced nuclear weapons of special design, such as a “Super-EMP” (electromagnetic pulse) weapon capable of paralyzing civilian, military, and strategic assets over the area of an entire continent. Even India and Pakistan have the capacity to produce more nuclear pits than the United States today.

Consequently, the Bush Administration hopes to revitalize the United States scientific and industrial infrastructure for nuclear weapons. The Bush Administration seeks a capability to maintain existing U.S. nuclear forces. The Bush Administration also seeks a capability, if necessary, to adapt U.S. nuclear forces to changing circumstances and provide the United States with the means to meet new threats in a timely manner. The Bush Administration judges that the ability to innovate and produce small builds of special purpose weapons would convince an adversary that it could not expect to negate U.S. nuclear weapons capabilities. Accordingly, the Bush Administration plans to

create small “advanced warhead concept teams” to assess changing military needs as they evolve and evaluate options for modified or new warheads. A “Robust Nuclear Earth-Penetrator” (RNEP), capable of destroying buried targets while limiting collateral damage to civilians, was among these projects. Another study called for a new low-yield nuclear weapon. These studies—not development programs—were intended to help train the next generation of weapon scientists, anticipate new technologies that adversaries might field, and position the United States for weapons development should that become necessary. The studies were theoretical only, and were not, nor would they have inevitably led to, the design, development, and production of new nuclear weapons.

In 2004, Congress de-funded the above programs—all of them small-scale, involving few personnel and very small financial resources. They were the last remnant of the U.S. government’s effort to retain some capability to develop new design nuclear weapons. The Bush Administration hopes to restore the canceled funding in 2005.

Although no commitment or decision has been made to build new nuclear weapons, there appears to be a growing bipartisan awareness among experts that there is a need for new nuclear capabilities relevant to the new strategic environment. New designs may also enhance the safety, security, and reliability of our nuclear stockpile. Therefore, it is only prudent to avoid foreclosing promising options to develop, test, and produce new weapons in an uncertain future.

Does the NPR call for greater reliance on nuclear weapons, and thereby lower the threshold for nuclear use?

One of the greatest myths about the NPR is that it calls for increased reliance on nuclear weapons and makes the possibility of nuclear war more likely. Critics often cite as evidence of greater reliance on nuclear weapons the NPR’s finding that nuclear weapons not only *deter* potential enemies, but can also *dissuade* and *defeat* enemies and *assure* friends. The false argument is made that the NPR is going beyond traditional deterrence, and advocating relying on nuclear weapons for a host of new missions. Yet nuclear weapons have always played all of the roles described in the NPR. During the Cold War, the United States used nuclear weapons to *deter* and *dissuade* the Soviet Union and other enemies, used nuclear weapons to *defeat* Japan in World War II, and used nuclear weapons to *assure* NATO and other allies.

The NPR may have introduced a more precise and explicit paradigm for understanding the role that nuclear weapons play in U.S. national security policy—historically and today—but did not invent new roles for nuclear weapons.

The idea that nuclear weapons can play a role that goes beyond threatening nuclear retaliation is not new to the NPR or to the Bush Administration. The Clinton Administration, in its ***National Security Strategy for a New Century*** (October 1998),

also stated that nuclear weapons can serve as “a guarantee of our security commitments to allies and a disincentive to those who would contemplate developing or otherwise acquiring their own nuclear weapons.”

The NPR and the Bush Administration, far from fostering increased reliance on nuclear weapons, actually are moving in the opposite direction, toward heavier reliance on conventional weapons instead of nuclear weapons. The “New Triad” advanced by the NPR and the Bush Administration seeks to incorporate advanced conventional weapons into planning for strategic operations that were formerly the exclusive domain of nuclear weapons, thereby making the employment of nuclear weapons less necessary and less likely. Much is also wrongly made of the Bush Administration’s emphasis on *preemptive* attacks on enemy weapons of mass destruction, drawing the false inference that this means greater emphasis on preemptive *nuclear* strikes. Yet any use of nuclear weapons, preemptive or otherwise, would be a serious step taken only after the most deliberate assessment of the consequences. It is a decision that would not be taken lightly.

Finally, the objective possibility of nuclear conflict may in fact be increasing, but not because of the NPR or the Bush Administration. The proliferation of chemical, biological, radiological, and nuclear weapons to terrorists and unstable states may well increase the risk in coming years of nuclear use by or against the United States. The strategy articulated in the NPR is an attempt to lower the possibility of such risk.

Does the NPR support arms control and reductions in the number of U.S. nuclear weapons?

At the conclusion of the Nuclear Posture Review, the Bush Administration announced that the United States would reduce its strategic nuclear forces from the current level of about 6,000 strategic nuclear warheads to 1,700-2,200 operationally deployed warheads over the next decade. The Bush Administration codified these reductions in the Strategic Offensive Reductions Treaty (the Moscow Treaty) signed by the United States and Russia in May 2002. Thus, as a result of the NPR, the Bush Administration has set in motion the largest arms control-mandated reduction of strategic nuclear weapons in history.

Does the NPR support the use of nuclear weapons against non-nuclear threats, such as chemical or biological weapons?

The United States has never ruled out the possible first use of nuclear weapons, including against non-nuclear threats such as chemical or biological weapons. Although the United States has pledged that it would not attack non-nuclear weapon states with nuclear weapons under most circumstances, the U.S. has maintained a policy of “purposeful ambiguity” about the circumstances under which it would consider nuclear employment.

Therefore, the Bush Administration has continued—and the NPR reflects—the traditional policy that refrains from “tying the hands” of the President and the military and keeping open, for a broad range of possible contingencies, the nuclear option. However, although the Bush Administration continues the broad nuclear policy inherited from previous administrations, the NPR and the Bush Administration’s concept of the “New Triad” —with its emphasis on advanced conventional weapons, missile defenses, and robust infrastructure, coupled with command, control, communications and intelligence enhancements—is designed to make the United States less technically and operationally dependent on nuclear weapons.

Last, as noted earlier, if the NPR and the Bush Administration have been more vocal about the possible use of nuclear weapons against non-nuclear actors armed with chemical and biological weapons, it is because the threats from these actors have increased dramatically.

Is there a difference between nuclear and non-nuclear strike capabilities, or does the NPR see them as part of a continuum?

The NPR and the Bush Administration see nuclear weapons in a general sense as part of an integrated suite of capabilities necessary to achieve U.S. security goals. However, there is a recognition that they are the most destructive weapons, that WMD—including nuclear weapons—may be used against the United States, its friends and allies, and that nuclear weapons and planning for nuclear operations must be incorporated into U.S. national security policy. However, the NPR and the Bush Administration also clearly recognize the unique destructive character of nuclear weapons, and see nuclear weapons as instruments of last resort. Under the “New Triad”—as in the past—only the President can sanction the use of nuclear weapons, and release procedures unique to nuclear weapons impose a “bright line” distinguishing nuclear from other weapons.

Does the NPR support a resumption of nuclear testing?

The United States has observed a moratorium on nuclear testing since 1992. The United States is not required under the terms of the Non-Proliferation Treaty (NPT) or any other treaty to cease nuclear testing. Indeed, when the NPT was negotiated in the 1960s and agreed to by nearly 200 signatory nations, the NPT then and now places no restrictions on the United States to design, produce, deploy, and test nuclear weapons in any number and variety.

Despite Senate refusal to ratify the Comprehensive Test Ban Treaty in October 1999, and despite allegations of cheating on the moratorium by other states, the United States continues to honor its unilateral moratorium on nuclear tests. Under the Clinton Administration, the Department of Energy developed the Stockpile Stewardship

Program to eventually develop a capability to monitor and maintain the reliability of U.S. nuclear weapons in the absence of testing. The Bush Administration continues this program and the nuclear test moratorium. It is hoped that the Stockpile Stewardship Program will invent highly advanced new computing and experimental capabilities to verify the safety and reliability of the United States' aging nuclear warheads without testing. Congress first authorized the program in 1993. The Stockpile Stewardship Program has been under development, and controversial, since that time. Whether the safety and reliability of the United States' nuclear stockpile can be maintained without testing in the long-term remains to be seen.

Although the Bush Administration has strengthened the Stockpile Stewardship Program, there are serious concerns that the program ultimately may fail. Even proponents of the program acknowledge that some doubt exists about whether the Stockpile Stewardship Program can in the long-run provide sufficient confidence in the safety and reliability of U.S. nuclear weapons, without testing, as those weapons age. Moreover, the Bush Administration, following the recommendations of the NPR, wants the U.S. nuclear weapons infrastructure to be able to respond to technical surprises, such as age-related defects that appear suddenly in the stockpile. The Bush Administration also wants the infrastructure to be responsive to political surprises, such as changes in relations with China, Russia, or other states. The Bush Administration, again following the recommendations of the NPR, also wants the U.S. nuclear weapons infrastructure to be sufficiently responsive to anticipate innovations in weapons designs or other new threats from foreign adversaries, so that these new threats can be countered. Finally, testing may be required if strategic necessity compels the United States to develop nuclear weapons of new design.

As a hedge against the possible failure of the Stockpile Stewardship Program, the NPR recommends that the United States reduce the amount of time required to resume nuclear testing at the Nevada Test Site. Today, in the event that failure in the Stockpile Stewardship Program raises profound doubts about the safety and reliability of U.S. nuclear weapons, it would take two to three years for the United States to prepare for and actually conduct an underground nuclear test. This time is likely to lengthen in the future, as remaining personnel with nuclear expertise and testing skills retire. The Bush Administration is seeking to reduce this time to a period not longer than 18 months.

The bottom line is that the NPR and the Bush Administration have not advocated a resumption of nuclear testing, but have supported reversing the sharp erosion in the United States' capability to conduct nuclear tests on an emergency basis. The excessively long time required for the United States to resume nuclear testing—now at 24-36 months, half or more of a presidential administration—amounts to the absence of any U.S. capability to test in an emergency on short notice.

Today the question is not whether the United States should resume nuclear testing, but whether the United States can retain a capability to conduct a test in a reasonable period of time.

Would U.S. nuclear modernization fuel nuclear proliferation?

The evidence of recent years suggests either that there is no correlation between the modernization of the U.S. nuclear deterrent and nuclear proliferation by other states, or that the failure of the United States to modernize its nuclear deterrent encourages nuclear proliferation by others. Rogue states will likely seek WMD capabilities irrespective of the policies pursued by the United States.

Despite great restraint by the United States in its nuclear posture, other nations, and especially potential enemies of the United States, have pressed ahead with ambitious nuclear weapons programs. Consider the following:

- The United States has observed a moratorium on nuclear testing for thirteen years.
- The United States allowed its nuclear weapons industrial base to wither to the point where, for many years now, the U.S. has not produced a single new nuclear weapon.
- The United States has unilaterally retired and dismantled thousands of tactical nuclear weapons, eliminating all but a small number of this class of nuclear weapon.
- Under President Bush, the United States concluded with Russia the Moscow Treaty, which will cut U.S. strategic nuclear weapons by two-thirds, the largest single arms control-mandated reduction of strategic nuclear weapons in history.
- The United States has not conducted a major strategic forces military exercise since the early 1990s.

In contrast, during the same period when the United States has demonstrated unprecedented restraint in its nuclear weapons program:

- Terrorists are actively seeking nuclear weapons and have declared their intention to employ nuclear weapons against the United States.
- North Korea pursued a clandestine nuclear weapons program and now declares itself to be a nuclear weapons state.
- Iran pursued a clandestine nuclear weapons program, and according to some experts is on the verge of becoming a nuclear weapons state.
- Pakistan tested nuclear weapons and declared nuclear weapons state status.
- India tested nuclear weapons and declared nuclear weapons state status.

-
- China and Russia continue developing nuclear weapons of new design, have maintained or modernized their nuclear weapons industrial infrastructure, are deploying a new generation of modernized nuclear missiles, and conduct major nuclear forces exercises.
 - Russia retains many thousands of tactical nuclear weapons and emphasizes their use in military writings and statements.
-

The New Triad

What is the “New Triad” and how is it different from the traditional nuclear Triad?

During the Cold War, deterrence of Soviet attack was accomplished by relying on a “Triad” of nuclear forces—land-based missiles, sea-based missiles, and manned bombers. The demise of the Soviet threat and the emergence of other challenges to U.S. security created an opportunity to reassess the need to rely exclusively on the nuclear Triad for deterrence.

The Bush Administration has described a “New Triad” of weapons systems and capabilities that will contribute to nuclear deterrence and U.S. national security in the coming years. The graphic below is the administration’s depiction of the transformation of the old nuclear Triad into the “New Triad.” In this “New Triad,” nuclear weapons and precision-guided conventional weapons combine as “offensive strike” forces. The “New Triad” is designed to reduce the U.S. reliance on nuclear weapons and provide the President with a greater number of options when responding to an attack.

Missile defenses comprise a second leg of the “New Triad.” The NPR and the Bush Administration have concluded that defenses will contribute to deterrence by complicating enemy attack planning and undermining the confidence of an adversary that he can successfully strike the United States with missiles. Missile defenses give the United States, in the event of an enemy missile attack, another alternative to nuclear retaliation.

The third leg of the “New Triad” is a “responsive infrastructure” that would allow the United States to maintain and, if necessary, improve its nuclear arsenal in response to emerging threats. This capability will allow the United States to reduce its nuclear forces, knowing it could restore them at a later date, if new threats emerge.

The three “New Triad” legs are linked together by “command and control, intelligence, and planning capabilities.” These will provide the United States with the ability to

identify targets and plan nuclear or conventional attacks on short notice, in response to unexpected threats.

What role do missile defenses play in the NPR?

Missile defenses are an important element of the New Triad. As ballistic missiles and WMD have proliferated in recent years, the need for missile defenses to counter this threat has become increasingly recognized.

The deployment of missile defenses to protect Americans, U.S. forces, allies, and friends may reduce the need to rely on offensive nuclear strike capabilities. The ability to defend the United States against ballistic missile launches may also dampen pressures for U.S. preemptive military action. In other words, if it is possible to shoot down enemy missiles after they are launched, the imperative to destroy them on the ground before they are launched may be reduced.

Missile defenses also support the four defense goals articulated in the NPR and the Quadrennial Defense Review. In particular, missile defenses can:

- *Assure* friends and allies of the U.S. commitment to their security. The deployment of missile defenses to protect allied territory would be a concrete symbol of the enduring U.S. commitment to defend the territory, populations, and sovereignty of other countries.
- *Dissuade* other countries from seeking to invest scarce resources in the acquisition of threatening ballistic missile capabilities. Missile defenses will close a vulnerable loophole that adversaries might otherwise seek to exploit.
- *Deter* enemies from attacking the United States, its deployed forces, allies, or friends with ballistic missiles. By raising the likelihood that an attack will fail, missile defenses can help deter that attack in the first place.
- *Defeat* aggression. By defending against ballistic missiles should deterrence fail, missile defenses will help ensure that an aggressor does not achieve his objectives and will increase the prospects that he will be defeated.

It is important to note that the missile defenses being pursued by the Bush Administration are not as extensive as the missile defense program that was researched in the 1980s and intended to deal with Cold War missile threats. Rather, the United States is deploying a modest capability to defend against limited missile attacks from rogue states. As missile threats to the United States expand and mature, this initial, modest defense may be augmented in the future by more robust capabilities.

What is the status of the U.S. industrial base for manufacturing nuclear weapons?

The United States has not produced a single new nuclear weapon for many years, as the U.S. industrial base for manufacturing nuclear weapons has significantly atrophied.

In recent years, the focus of efforts in the U.S. nuclear weapons complex has changed. Instead of concentrating on maintaining the United States' technological lead in nuclear weapons over other nations by developing, testing, and producing new nuclear weapons, the U.S. effort was redirected into trying to maintain the safety and reliability of existing nuclear weapons—many of which had already exceeded their design life—without underground nuclear testing.

Consequently, the size of the U.S. industrial base for manufacturing nuclear weapons was dramatically reduced, as six of the ten industrial facilities supporting nuclear weapons production were closed. The manufacturing plants at Hanford, Pinellas, Mound, and Rocky Flats all stopped work on nuclear weapons. The four remaining production facilities—the Kansas City Plant, the Y-12 Plant in Tennessee, the Savannah River Site, and the Pantex Plant—have changed their operations to support maintenance of existing nuclear weapons, instead of production of new weapons. The nuclear weapons workforce, numbering 58,000 people in 1990, declined below 24,000 workers a decade later.

An example of the drastic decline in U.S. capabilities to make nuclear weapons is the Savannah River facility. The Savannah River industrial facility had previously produced plutonium and tritium to fuel new nuclear weapons. But until recently, the closing of Savannah River's reactors for making plutonium and tritium left the United States with no industrial capability to produce the fuel necessary for making new nuclear weapons. From 1988-2003, the United States did not produce any tritium at Savannah River. Despite the restoration of limited tritium production in 2003, the United States will eventually need to produce additional tritium in order to meet the requirements of even a reduced nuclear stockpile.

The Pantex Plant is another striking example of the re-direction of effort by the U.S. nuclear complex. Previously, the Pantex Plant focused mostly on the final assembly of nuclear weapons. Today, Pantex's workload is mostly dismantling retired nuclear weapons.

The three nuclear laboratories at Livermore, Los Alamos, and Sandia, and the Nevada Test Site—previously considered research centers—are now counted among the nuclear weapons industrial base. Many experts believe that the nuclear weapons laboratories, staffed by scientists, are unsuited to participate in manufacturing or dismantlement industrial activities. Nonetheless, the closing of U.S. nuclear weapon industries has necessitated that the Department of Energy (DOE) turn to the nuclear laboratories to compensate for the shortfall facing the United States in the capability to produce components critical to maintaining the existing nuclear weapons stockpile.

For example, the closure of the Rocky Flats industrial plant deprived the United States of the capability to make plutonium "pits"—the atomic explosive in nuclear weapons—

and also the fission trigger for a fusion reaction that makes a thermonuclear weapon work. In order to partially compensate for the closure of Rocky Flats, the DOE is establishing a small-scale facility at Los Alamos National Laboratory for producing pits. The Los Alamos facility will have only a small fraction of the manufacturing capability that previously existed at Rocky Flats. It is hoped that Los Alamos will be able to make some 20-50 pits per year. But critics warn that this small number may be insufficient to sustain the safety and reliability of existing nuclear weapons, especially if the United States must replace large numbers of aging pits at some point in the future.

Critics also warn that, because of the decaying condition of the U.S. nuclear industrial infrastructure, the time required for the United States to adapt its nuclear stockpile to meet future challenges is increasing dangerously. Future nuclear threats to the United States may well arise quickly and unexpectedly. Indeed, nuclear threats from terrorists, and nuclear developments in North Korea, Iran, China and Russia already pose challenges that the United States is not prepared to meet, according to some. Yet years and even decades will be required for what remains of U.S. nuclear industry to design, develop, and deploy new nuclear weapons, capable of meeting these new challenges, should this become necessary.

Implementing the NPR

How long will it take to implement the NPR?

The Bush Administration and the crafters of the Nuclear Posture Review understood that the evolution of U.S. military forces toward more flexible and responsive capabilities would take time. It is not easy to transform the capabilities of the armed forces to deal with a range of threats that may change virtually overnight.

In many cases, it takes years, perhaps decades, to adapt U.S. forces to future military requirements. Implementing such transformational changes requires the support of both the Executive and Legislative branches of government, as well as the understanding and support of the American people.

How is progress toward achieving the NPR's goals to be assessed?

Because the NPR laid out a course of action that requires many years to implement fully, it also identified milestones along the journey where progress can be assessed.

The NPR did not predict how long it would take to build up the kinds of capabilities reflected in the New Triad. This will depend in large measure on the level of support and congressional funding for the programs that would make the New Triad a reality. However, in accordance with the requirements of the Moscow Treaty, U.S. strategic nuclear weapons will be reduced to a level between 1,700 and 2,200 by the end of 2012. During this period of reductions, it is hoped that sufficient progress will be made in realizing the growth of other New Triad capabilities to compensate for the reduction in the number of strategic nuclear weapons.

The NPR established a framework for conducting periodic assessments of progress in developing New Triad capabilities. These periodic assessments are to take place roughly every two years. The graphic below illustrates this, and is taken from an official Department of Defense presentation on the NPR.

The first periodic assessment was completed in 2004. It was referred to as the "Strategic Capabilities Assessment," and identified areas of both progress and shortfalls. Though its details remain classified, Department of Defense officials have outlined some of its more general conclusions. For example, while the nuclear drawdown envisioned by the NPR continues apace, the U.S. still lags in the development of non-nuclear, precision strike capabilities.

These periodic assessments are critical inputs to the annual budget process and will be important to informing discussion over what capabilities to pursue and how rapidly to pursue them.

Appendix

Section 1041 of the Floyd D. Spence National Defense Authorization Act for Fiscal Year 2001 (Public Law 106-398, as amended)

SEC. 1041. REVISED NUCLEAR POSTURE REVIEW.

(a) Requirement for Comprehensive Review.--In order to clarify United States nuclear deterrence policy and strategy for the near term, the Secretary of Defense shall conduct a comprehensive review of the nuclear posture of the United States for the next 5 to 10 years. The Secretary shall conduct the review in consultation with the Secretary of Energy.

(b) Elements of Review.--The nuclear posture review shall include the following elements:

(1) The role of nuclear forces in United States military strategy, planning, and programming.

(2) The policy requirements and objectives for the United States to maintain a safe, reliable, and credible nuclear deterrence posture.

(3) The relationship among United States nuclear deterrence policy, targeting strategy, and arms control objectives.

(4) The levels and composition of the nuclear delivery systems that will be required for implementing the United States national and military strategy, including any plans for replacing or modifying existing systems.

(5) The nuclear weapons complex that will be required for implementing the United States national and military strategy, including any plans to modernize or modify the complex.

(6) The active and inactive nuclear weapons stockpile that will be required for implementing the United States national and military strategy, including any plans for replacing or modifying warheads.

(7) The possibility of deactivating or dealtering nuclear warheads or delivery systems immediately, or immediately after a decision to retire any specific warhead, class of warheads, or delivery system.

(c) Report to Congress.--The Secretary of Defense shall submit to Congress, in unclassified and classified forms as necessary, a report on the results of the nuclear posture review conducted under this section.

The report shall be submitted concurrently with the Quadrennial Defense Review report due in December 2001.

(d) Sense of Congress.--It is the sense of Congress that the nuclear posture review conducted under this section should be used as the basis for establishing future United States arms control objectives and negotiating positions.

Acknowledgement

The U.S. Nuclear Strategy Forum would like to acknowledge and thank the following individuals for their efforts in producing this document:

David J. Trachtenberg is a member of the U.S. Nuclear Strategy Forum and Senior Vice President for Homeland Security at National Security Research, Inc. He is also a member of the Defense Science Board Task Force on Nuclear Capabilities. As Principal Deputy Assistant Secretary of Defense for International Security Policy and Acting Deputy Assistant Secretary of Defense for Forces Policy (2001-2003), he helped develop and articulate the principles contained in the 2001 Nuclear Posture Review. Mr. Trachtenberg served as Professional Staff Member on the House Armed Services Committee (1995-2001), where he headed the committee's policy staff, supported the HASC Special Oversight Panel on Terrorism, and helped craft the legislation creating the independent Commission to Assess the Ballistic Missile Threat to the United States (a.k.a. the "Rumsfeld Commission").

Dr. Peter Vincent Pry is Director of the United States Nuclear Strategy Forum. Dr. Pry is an advisor on national security matters on the staff of Congressman Curt Weldon, Vice Chairman of the House Armed Services Committee and the Homeland Security Committee, and Congressman Roscoe Bartlett, Chairman of the Subcommittee on Projection Forces, House Armed Services Committee. Previously, Dr. Pry served on the House Armed Services Committee Staff (1995-2001) and in the Central Intelligence Agency (1985-1995). Dr. Pry has written numerous books on nuclear weapons, strategy, and national security policy.