STRATEGY RESEARCH PROJECT

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THE 2002 NUCLEAR POSTURE REVIEW: A FIRST STEP IN TRANSFORMATION OR JUST A PAPER TIGER?

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ABSTRACT

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TITLE: THE 2002 NUCLEAR POSTURE REVIEW: A FIRST STEP IN TRANSFORMATION OR JUST A PAPER TIGER?

FORMAT: Strategy Research Project

DATE: 09 December 2002 PAGES: 36 CLASSIFICATION: Unclassified

In January 2002, the Bush Administration delivered the second Nuclear Posture Review (NPR) to Congress; the first such review was completed in 1994. Long before the 11 September 2001 terrorist attacks against New York City and Washington, D.C., the Defense Department's senior civilian and military leaders began an unprecedented debate and discussion about where America's military should go and what it should look like in the years ahead. Out of those debates, senior civilian and military leaders agreed on the urgent need for substantive changes in our defense strategy. The outline of those changes was reflected in the 2001 Quadrennial Defense Review Report as well as in the 2003 Defense Department budget request. Administration officials claim that the 2002 NPR paves the way for a major change in our deterrent strategy and that it provides a blueprint for transforming our strategic posture. Critics contend that the review is flawed, that it creates new roles for nuclear weapons, and that it still translates into the maintenance and sustainment of a large nuclear arsenal. The purpose of this paper is to analyze the 2002 Nuclear Posture Review, compare and contrast it with the 1994 NPR, and evaluate whether it advances our Defense Department's transformation.

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THE 2002 NUCLEAR POSTURE REVIEW: A FIRST STEP IN TRANSFORMATION OR JUST A PAPER TIGER?

> A periodic comprehensive review of our nation's strategic posture is appropriate as the national security environment changes. The last Nuclear Posture Review was conducted eight years ago to address how to effectively draw down our strategic forces in the post-Cold War world. For a number of reasons, including a rapidly changing international environment and complex new national security challenges, the time is right to again assess our strategic direction.
>
> —Admiral James O. Ellis, USCINCSTRAT,
> Before the Senate Armed Services
> Committee on 14 February 2002

On January 8, 2002, in compliance with the National Defense Authorization Act for Fiscal Year 2001, Secretary of Defense Rumsfeld delivered the classified Nuclear Posture Review (NPR) to Congress. The NPR, a broad review of U.S. nuclear policies, doctrine, forces, and supporting infrastructure, exists to guide long-range planning for the sustainment and modernization of our strategic forces. It does not, in and of itself, set or establish nuclear policy. On January 9, 2002, unclassified portions were "leaked" to the press. Critics claimed that the pledged warhead reductions in the NPR were largely cosmetic and that the NPR hardly constituted transformation. They branded the report "deeply flawed" and countered that "if it were adopted as government policy, it could cause irreparable harm to the national security of the United States."[1] In today's fiercely partisan politics, such scrutiny and criticism are the norm and should be expected. The purpose of this paper is to analyze selected issues of the 2002 Nuclear Posture Review and to evaluate whether it serves as a model of transformation.

DEFINITION OF DETERRENCE

Before analyzing the review, it is first necessary to define "deterrence" and "transformation" to provide a common frame of reference. The "deterrence of aggression and coercion remains a cornerstone of our National Security Strategy (NSS) and our strategic nuclear forces serve as the most visible and important element of our commitment to this principle."[2] Deterrence, a subcategory of coercion, is a military strategy in which one actor uses the threat of a credible and unacceptable reprisal to preclude a policy or action from an opponent. Deterrence rests on the adversaries' perception of U.S. offensive and defensive capabilities, our national will to employ them, and reliable and effective communications. As such, the "leak" identifying Iran, Iraq, Libya, North Korea, Syria, China, and Russia as countries that could be involved in U.S. nuclear strike contingencies was not a lapse in security, but rather

a deliberate act of transparency intended to send a clear and strong message to the aforementioned countries.[3] Some allege that by naming non-nuclear nations that we would strike under certain circumstances, our policy creates incentives for these nations to acquire nuclear weapons in order to deter the United States. Using this argument, they contend the 2002 NPR signifies a major step backwards and that it "increases the very danger it seeks to remove: a nuclear attack on the United States, its friends or allies."[4]

DEFINITION OF TRANSFORMATION

The 2001 Quadrennial Defense Review (QDR) states that the Department of Defense has embarked on an ambitious transformation of U.S. military forces to meet the challenges that lie ahead. Transformation, according to Arthur K. Cebrowski (Director, Force Transformation), consists of radical or sweeping change and is best defined as "those continuing processes and activities that create new sources of power and yield profound increases in military competitive advantage."[5] Secretary of Defense Rumsfeld believes that "transforming the U.S. global military begins with the development of new ways to deter conflict."[6] In fact, during his January 11, 2001 confirmation hearing, Defense Secretary-designate Donald Rumsfeld stated that the old concept of deterrence from the Cold War era was "imperfect for dissuading the threats of the 21st century and for maintaining stability."[7] As such, the review's assertion that we need to change our policies and force structure to improve their deterrent value comes as no surprise.

COMPARISON OF THE 1994 NPR AND 2002 NPR

A side-by-side comparison of the 1994 NPR and the 2002 NPR is shown in Table 1. While it reveals significant change in the ways and means to accomplish our ends, ultimately, the final number of operationally-deployed warheads remains relatively constant. As such, despite months of analysis, and working in full consultation with the Department of Energy, the administration has been met with stern opposition with critics claiming that it fails to transform our existing capability into a more suitable strategy to meet the security challenges that lie ahead.

1994 Nuclear Posture Review	2002 Nuclear Posture Review
Threat-based approach	Capabilities-based approach
START II level of 3,000-3,500 deployed strategic warheads by 2007	3,800 operationally-deployed warheads by 2007; 1,700-2,200 by 2012
- 14 Trident SSBNs - 500 Minuteman-III ICBMs - 66 B-52 bombers (later raised to 71) - 20 B-2 bombers - MIRVed ICBMs - No more than 1,700-1,750 warheads on SLBMs	- 14 Trident SSBNs - 500 Minuteman-III ICBMs - 76 B-52H bombers - 21 B-2 bombers
"Hedge" force of nuclear weapons	"Responsive" force including possibly thousands of warheads
"The United States has no new nuclear weapons programs, and has committed to achieving a Comprehensive Test Ban Treaty, extending its testing moratorium in the interim." (1995 Annual Report to the President and the Congress by the Secretary of Defense, William Perry)	"The United States has not conducted nuclear tests since 1992 and supports the continued observance of the testing moratorium. While the United States is making every effort to maintain the stockpile without additional nuclear testing, this may not be possible for the indefinite future."
"No new-design nuclear warhead production is required." (1995 Annual Report)	"A need may arise to modify, upgrade, or replace portions of the extant nuclear force or develop concepts for follow-on nuclear weapons better suited to the nation's needs."
"The purpose of our nuclear forces is to deter violence, not to be used in any conflict situation." (Deputy Defense Secretary John Deutsch, Hearing of the House Foreign Affairs Committee, October 5, 1994)	"Nuclear weapons could be employed against targets able to withstand non-nuclear attack."

TABLE 1. COMPARISON OF THE 1994 NPR AND 2002 NPR[8]

While the 2002 nuclear posture review would reduce the number of nuclear weapons, it raises questions about broadening the role of nuclear weapons beyond their Cold War function of deterring a Soviet attack. It also incites a heated debate between those who feel the employment of nuclear weapons is justified in response to chemical or biological attack; against hardened targets able to withstand conventional strikes; or in the event of surprising military developments, and those who view nuclear weapons as weapons of last resort. This paper will address both sides of the debate. In undertaking this endeavor, it is important to first examine the approach used by military planners to complete the review.

CAPABILITIES-BASED APPROACH

The 2002 Nuclear Posture Review changes our nuclear planning strategy from a threat-based approach to a capabilities-based approach. In the 1994 NPR, the strategic nuclear force was sized using a threat-based approach and centered on nuclear offensive forces. During a news briefing on January 9, 2002, Assistant Secretary of Defense, J.D. Crouch III, stated that the 2002 NPR is a derivative of the President's tasking to transform the U.S. military. Accordingly, civilian and military planners were challenged to creatively improve upon the existing strategy. Table 2 compares and contrasts both approaches.

Traditional Threat-Based Approach (1994 NPR)	New Capabilities-Based Approach (2002 NPR)
- U.S. forces size primarily reflected response to a specific threat - Nuclear offensive emphasis - Some flexibility for adaptive planning - Missile defense considered impractical and destabilizing	- Capabilities for multiple contingencies and new threats in a changing environment - Capabilities required are not country-specific - Maintaining capabilities for unexpected and potential threat contingencies are a priority - Reductions in United States nuclear inventory may reduce risk of inadvertent launch - Includes active defense and non-nuclear capabilities - Missile defense reduces dependency on offensive nuclear strike forces and improves force survivability - Non-nuclear strike forces (conventional strike and information operations) reduce dependency on nuclear forces to provide defensive deterrent - Effectiveness depends upon command and control, intelligence, and adaptive planning.

TABLE 2. COMPARISON OF THREAT-BASED APPROACH AND CAPABILITIES-BASED APPROACH TO NUCLEAR FORCE PLANNING[9]

SYNCHRONIZATION WITH 2001 QDR

The 2002 NPR is well synchronized with the four main policy goals of the 2001 QDR: assuring allies and friends; dissuading future military competition; deterring threats and coercion against U.S. interests; and if deterrence fails, decisively defeating any adversary.[10] The table below outlines how the NPR was designed to support each of the defense policy goals.

ASSURE ALLIES AND FRIENDS	DETER AGGRESSORS
- Credible non-nuclear and nuclear response options support U.S. commitments. - Defenses protect security partners and power projection forces - Second-to-non nuclear capability assures allies and public	- Nuclear and non-nuclear options provide tailored deterrent - Defenses discourage attack by frustrating adversary's attack plans - Infrastructure improves U.S. capabilities to counter emerging threats
DISSUADE COMPETITORS	**DEFEAT ENEMIES**
- Diverse portfolio of capabilities denies payoff from competition - Non-nuclear strike favors U.S. - Infrastructure promises U.S. competitive edge	- Strike systems can neutralize range of enemy targets - Defenses provide protection if deterrence fails

TABLE 3. QDR DEFENSE POLICY GOALS[11]

Accordingly, "We're focusing on how we will fight, not against whom or when."[12] While Bush officials claim that the NPR focuses on capabilities, it is readily apparent that extant and emerging threats are still driving this process. "The proliferation of nuclear, biological and chemical weapons and ballistic missile delivery systems continues unabated:

- 12 nations have nuclear weapons programs
- 28 nations have ballistic missiles
- 13 nations have biological weapons
- 16 nations have chemical weapons."[13]

CHANGING STRATEGIC ENVIRONMENT

On February 15, 2002, administration officials reiterated the unpredictability of the threat stating that "We can no longer rely solely on offensive nuclear forces or focus on a single peer component because deterrence will function less predictably in the future."[14] "We now need the flexibility to tailor military capabilities to a wide spectrum of contingencies, to address the unexpected, and to prepare for the uncertainties of deterrence."[15] President Bush articulated this position in the 2002 National Security Strategy. "Enemies in the past needed great armies and great industrial capabilities to endanger America. Now, shadowy networks of individuals can bring great chaos and suffering to our shores for less than it costs to purchase a single tank."[16] Some argue that a capabilities-based approach marks the abandonment of deterrence. In the past, the target of deterrence - the whom - needed to be explicitly defined in order to understand the adversary's objectives, key vulnerabilities, propensity to take risks, bases of power, most valued assets, and other factors likely to influence his decisions.[17] But can you

deter a terrorist? Terrorists, unlike the Soviet Union, have already demonstrated the capability and intention to strike out at all costs, on American soil, and without regard to civilian casualties. The Bush Administration believes that "Traditional concepts of deterrence will not work against a terrorist enemy whose avowed tactics are wanton destruction and the targeting of innocents; whose so-called soldiers seek martyrdom in death and whose most potent protection is statelessness."[18] The threats the United States must confront have changed, and so must our strategy, policies, operational concepts, and force structure. The Bush Administration believes the 2002 NPR signifies a step in the right direction and that the transformation of our military is a sine qua non. To prepare for the changing strategic environment, our policies, platforms, and weapons must remain formidable to retain or improve their deterrent value. Beyond our borders, our defense strategy depends on strengthening alliances and partnerships and developing new forms of security cooperation.

NEW STRATEGIC RELATIONSHIP WITH RUSSIA

A controversial element of the NPR is the New Strategic Framework between Russia and the United States, which includes reducing offensive nuclear weapons, creating defensive systems that protect against missile attacks, strengthening nonproliferation and counter-proliferation measures, and cooperating with Russia to combat terrorism.[19] Russia, no longer the "evil empire" of the Cold War, has emerged as a "strategic partner." "United States policy seeks to use this turn in Russian thinking to refocus our relationship on emerging and potential common interests and challenges."[20] Fostering an environment of mutual trust and cooperation to both prosecute the war on terrorism and improve security at dozens of nuclear weapon storage sites throughout Russia is certainly in our country's best interests. However, for many, this "partnership" is a bridge too far. Russia still possesses, and continues to modernize, its substantial strategic nuclear forces. In fact, because of the deterioration of their conventional forces and severe economic turmoil, Russia has placed increased reliance on nuclear weapons. Some speculate whether this might be another case of the "peace dividend" being implemented prematurely, requiring yet another costly buildup should Russia (secretly) retain the bulk of its strategic arsenal.[21] Even the Bush Administration concedes, "Russia's uneven commitment to the basic values of free-market democracy and dubious record in combating the proliferation of weapons of mass destruction remain matters of great concern."[22] Besides, if we now have a "completely new relationship with Russia" why do we still need to maintain thousands of missiles on alert? Many contend that Russia's "friendship" is largely due to its cash-strapped

economy and that it is principally motivated by Russia's desires for U.S. tolerance when combating its own internal problems with Chechnya.

NEW TRIAD

For over 40 years, the United States maintained a triad of strategic nuclear forces consisting of land-based intercontinental ballistic missiles (ICBMs), submarine-launched ballistic missiles (SLBMs), and heavy bombers to deter the Soviet Union and its allies from initiating a large scale conventional, biological, chemical, or nuclear attack against the United States and its allies in Europe and Asia. Today, however, "U.S. nuclear forces alone are unsuited to most of the contingencies for which the United States prepares. The United States and allied interests may not require nuclear strikes."[23] The Gulf War demonstrated that high-technology, precision-guided conventional munitions can devastate the political, military, and economic base of a country without the need to resort to the use of nuclear weapons. "Within the New Triad, nuclear forces will be integrated with, rather than treated in isolation from, other military capabilities."[24] The 2002 NPR introduces a "New Triad" consisting of: (1) nuclear and non-nuclear strike means, such as information warfare; (2) passive and active defenses, notably a national missile defense system; and (3) a revitalized defense infrastructure. Proponents argue that the addition of non-nuclear strike forces, such as conventional strike and information operations, and missile defenses will make the U.S. less dependent on nuclear offensive strike systems and reduce the risk to the nation. They claim that the new triad provides greater strategic flexibility in an era characterized by surprise and that it offers the President more options for deterring and defeating aggression.

The NPR states that "Missile defenses are beginning to emerge as systems that can have an effect on the strategic and operational calculations of potential adversaries. They are now capable of providing active defense against short-to medium range threats."[25] The Bush Administration believes that a layered ballistic missile system with ground, sea, air, and space-based components will dissuade potential adversaries from acquiring ballistic missiles, threatening to use weapons of mass destruction, or attacking the United States. Skeptics believe the NPR's plan to rely on a missile defense shield is unrealistic and that the decision to build a nation-wide missile defense system by 2012 could provoke nuclear proliferation rather than deter it. According to Dr. Andrew Krepinevich, "The [2002 Nuclear Posture] review places far too much faith in missile defenses. Despite the efforts of nearly half a century, effective ballistic missile defenses remain a long-term goal not a reality."[26]

To transition to the New Triad, an overhaul of the existing strategic force is required. In essence, what has been proposed is simply a repackaging of the existing strategic triad within a new framework. The 2002 NPR proposes the creation of a strategic, non-nuclear, precision strike force, but the administration's budget contained few major initiatives to enhance these capabilities. "Instead, the budget invests heavily in highly problematic missile defenses, while precision-strike force weaponry, like stealth bombers, extended-range unmanned strike aircraft and long-range precision munitions, remain underfunded."[27] Critics maintain that we do not fully understand the values or motivations of our potential adversaries and as such, deploying non-nuclear weapons may prove to be of little value.

The U.S. Department of Energy maintains and operates a complex of facilities to develop, produce, and sustain the nuclear warheads deployed on U.S. nuclear forces. Over the last decade, the size and capacity of this infrastructure has atrophied as the United States has reduced its force structure, suspended nuclear explosive testing, and stopped designing new types of nuclear warheads. The Department of Defense has identified several deficiencies in current nuclear platform sustainment programs to include: solid rocket motor design, development and testing; technology for current and future strategic systems; improved surveillance and assessment capabilities; command and control platforms and systems; and design development, and production of radiation-hardened parts.[28] According to the 2002 NPR, "A modern, responsive nuclear weapons sector of the infrastructure is indispensable, especially as the size of the operational deployed nuclear arsenal is reduced."[29] As such, the Bush Administration supports revitalizing the U.S. nuclear infrastructure with the capacity to: upgrade existing systems, shorten timelines for the production of weapons, and develop and field entirely new systems.

Secretary Rumsfeld believes the effectiveness of this New Triad depends upon command and control, intelligence, and adaptive planning. "Exquisite intelligence on the intentions and capabilities can permit timely adjustments to the force and improve the precision with which it can strike and defend."[30] Indeed, deterrence starts with our intelligence capabilities and it relies heavily on the national intelligence architecture to support our deliberate and crisis action planning processes. Emerging threats such as mobile and re-locatable targets and hardened underground facilities demand robust intelligence support. The rationale for a commander's perfect or near perfect understanding of the battle space in order to make better and faster decisions is clear. However, achieving perfect or near perfect understanding is extremely difficult and not without funding and program tradeoffs. Despite significant progress made to improve intelligence sharing and interagency cooperation following the terrorist attacks on 11

September 2001, it seems unlikely that we will have "exquisite intelligence" to prevent follow-on attacks.

SIZING THE NUCLEAR FORCE

In adopting a capabilities-based approach, the Bush Administration decided that the nuclear force must be sized to address immediate, potential, and unexpected contingencies. "Immediate contingencies involve well- recognized current dangers."[31] Examples of immediate contingencies include "an Iraqi attack on Israel or its neighbors, a North Korean attack on South Korea, or a military confrontation over the status of Taiwan."[32] "Potential contingencies are plausible, but not immediate dangers.[33] A potential contingency might be "the emergence of a new, hostile military coalition against the United States, or its allies in which one or more members possesses weapons of mass destruction and the means of delivery."[34] "Unexpected contingencies are sudden and unpredicted security challenges," like the Cuban Missile Crisis.[35]

The 2002 NPR does not determine specific stockpile quantities or readiness requirements but it does establish three distinct categories: operationally-deployed, responsive, and inactive. Operationally-deployed warheads are fully ready for employment and either mated on, or allocated to operational delivery systems; these warheads are part of the active stockpile. Operationally-deployed forces are sized to provide the capabilities required to meet the U.S. defense goals in the context of immediate, and unexpected contingencies. That is, a sufficient number of forces must be available on short notice to counter known threats while preserving a small, additional margin in the event of a surprise development."[36] The NPR recommends unilaterally reducing the number of operationally deployed nuclear warheads in the U.S. from 6000 to 3,800 by FY07 and to between 1700-2200 by FY12.[37] The planned force structure for 2012 comprises 14 Trident SSBNs (with two of the 14 in overhaul at any time), 500 Minuteman III ICBMs, 76 B-52H, and 21 B-2 bombers.[38] Bush supporters applaud this proposal claiming that it bypasses counterproductive and lengthy legal processes. The opposition contends, "The proposed reductions occur over a ten year period and that's a long time to rely on trust. Without a formal agreement, it will be far easier for one side or the other to bail out as soon as the political going gets tough."[39] Beyond a verbal promise, there will be no means to monitor or verify state compliance.

WARHEAD REDUCTIONS OR FUZZY MATH?

Cuts to between 1700 and 2200 operationally deployed warheads appear to go beyond those planned for START II, which would have limited the United States and Russia to 3500

warheads each, and the prospective START III Treaty, which would have limited each side to 2000-2500 warheads. However, looks can be deceiving! The Bush Administration is using a different system to count warheads. The proposed reduction is not as significant as it might seem. The START treaties compute warheads by multiplying the number of delivery vehicles by the number of warheads per vehicle. All delivery vehicles, except those eliminated in accordance with START treaty rules, are counted. The Bush Administration, on the other hand, has announced that it will not count the warheads on delivery vehicles that are in overhaul or otherwise unavailable for nuclear missions. This category will include two Trident submarines and possibly several heavy bombers at any given time. If the weapons on these systems were counted, the U.S. strategic force would carry closer to 3000 warheads, a number between those planned for START II and START III.

Additionally, administration officials have stated that a portion of the warheads removed from operationally deployed nuclear delivery vehicles will be placed in storage and/or held in reserve rather than be destroyed. These warheads will form the "responsive force" which could be readied for deployment over a period of days to years depending on the delivery platform. "The responsive force is intended to provide a capability to augment the operationally deployed force to meet potential contingencies... The responsive force [also] provides a reserve from which replacements can be provided for operationally deployed weapons that evidence reliability problems."[40] Most or all of these warheads will also be part of the active stockpile. Presidents from both political parties have long recognized the need for responsive capability. For example, the Clinton Administration adopted a "lead and hedge" policy with regard to reductions below the START II Treaty in the 1994 NPR. Accordingly, the U.S. retained its ability to regenerate its nuclear forces reduced by the START II Treaty as a "hedge" against the possibility that Russia might reverse course away from democracy. The Pentagon has yet to decide how many weapons will go into the responsive nuclear force. Supporters claim that arms control agreements never mandated the elimination of nuclear warheads, i.e., warheads were "reduced" when the delivery vehicles that could carry them were eliminated. Skeptics, of course, state that while the NPR announces sharp reductions in nuclear weapons, since we are not destroying the weapons, we are merely shelving them in an active or inactive stockpile. Therefore, the review supports nuclear reshuffling, not nuclear reductions. Is this transformation? Or does it sow the seeds for distrust and disaster? Critics of the NPR maintain that the greatest nuclear peril posed by the Russians is not that they will launch a missile attack but that some of the bombs or nuclear material might find their way into the hands of terrorists.[41] According to a 1996 U.S. General Accounting Office report, "Upon its breakup in 1991, the

Soviet Union bequeathed a vast array of weapons of mass destruction to Russia, Ukraine, Belarus, and Kazakhstan. This legacy included about 30,000 nuclear weapons, 2,500 nuclear delivery systems, and at least 40,000 metric tons of chemical weapons."[42] Senator Carl Levin, Chairman, Committee on Armed Services, stated: "The most urgent unmet national security threat to the United States today is the danger that weapons of mass destruction or weapons-usable material in Russia could be stolen and sold to terrorists or hostile nation states and used against American troops abroad or citizens at home."[43] The only way to preclude this from happening is for both countries to commit to storing and/or disposing of fissile material under international safeguards. This will preclude reuse in nuclear weapons and ensure that reductions are irreversible.

Warheads not slated for retirement or dismantlement will be retained in the inactive stockpile. Warheads in this category will be available for use in stockpile evaluation support or as one-for-one reliability replacements for warheads in the operationally deployed or responsive forces. Of note, the United States is the only nuclear weapon state that cannot remanufacture replacements or produce new nuclear weapons. "Consequently, we are dependent on stored weapons to maintain the reliability, safety, and credibility of our stockpile and to guard against the possibility of a technical or catastrophic failure in an entire class of nuclear weapons."[44]

SUSTAINMENT OF CURRENT NUCLEAR FORCES

The 2002 NPR reaffirms the centrality of nuclear weapons in U.S. national security policy and advocates maintaining the existing triad of land-based intercontinental ballistics missiles, submarine-launched ballistic missiles, and strategic bombers until 2020 or beyond. This will prove to be no small feat as the force ages. The average ages of the existing systems are as follows: MM-III ICBM (26 years), D-5 SLBM (9 years), B-52 bombers (40 years), B-2 bombers (5 years), and SSBN (10 years).[45] To maintain force readiness, the review spotlights the need for force modernization and life extension programs for each of the launch platforms. While the NPR opens the door for the creation of follow-on systems, no new systems will be available any time soon. In fact, the review supports analysis of options for new strategic delivery systems: a new ICBM by 2018, a new ballistic missile submarine and SLBM by 2029, and a new strategic bomber by 2040.[46]

Opponents believe that retaining an air, land, and sea-based capability reflects a failure of the incumbents to achieve a true "peace dividend" and that sustaining a triad and its supporting infrastructure translates into feeding a huge defense budget. Supporters argue that, "Since the end of the Cold War, we have reduced our strategic forces by over 50 percent and non-strategic

nuclear warheads by over 80 percent. We have reduced the number of people involved in our strategic forces by over one-half and the number of military bases supporting them by approximately 60 percent. While overall defense spending has declined roughly 20 percent since the end of the Cold War, strategic force spending has declined approximately 70 percent; as a consequence, strategic force costs have dropped from 6.3 percent of Department of Defense total obligation authority in 1990 to less than 2.2 percent for Fiscal Year 2000."[47]

If we continue to maintain each of the three legs of the existing triad, are we really introducing radical or sweeping change? Service Chiefs maintain that each leg of the triad possesses unique qualities that enhance our deterrence policy and reduce risk to our nation. "Intercontinental ballistic missiles (ICBM) provide prompt response; strategic submarines (SSBN) provide survivability; and long-range aviation (LRA) bombers provide flexibility. The diversity of these assets and the synergy created by these attributes complicate an adversary's offensive and defensive military planning calculations while simultaneously providing protection against the failure of a single leg of the triad."[48]

STRATEGIC FORCE POSTURE

The 2002 NPR ensures that our strategic forces are postured to provide an assured response capability to inflict unacceptable damage to a potential adversary. It provides a wide range of deliberative, preplanned options and adaptive planning capabilities to ensure the nation can respond appropriately to any provocation rather than an "all or nothing" response. Secretary Rumsfeld has stated that, "Transforming America's defense for the 21st century will require a long standing commitment from our country and its leaders."[49] He has also clearly articulated that, "Transformation is not a goal for tomorrow, but an endeavor that must be embraced in earnest today."[50]

Defense officials maintain that since the end of the Cold War, "we have dramatically transformed our strategic force posture."[51] "Our strategic forces no longer target other countries during peacetime; our strategic bombers and their tankers have not been on alert status since 1991; our strategic submarines operate under comparatively reduced alert conditions; and our strategic command and control aircraft no longer maintain continuous 24-hour airborne alert operations."[52] Bush officials contend that the 2002 NPR represents the next step in a logical progression. Additionally, the Chairman of the Joint Chiefs of Staff has established a Strategic Deterrent Joint Warfighting Capability Assessment (JWCA) to determine the requirements for nuclear weapon systems in the 2020 timeframe. The report will be completed in early FY03.[53]

DEVELOPING NEW AND IMPROVED NUCLEAR WEAPONS

To meet the demands of the new triad, the NPR proposes that the Department of Energy's National Nuclear Security Administration (NNSA) undertake several initiatives in the design and development of new nuclear weapons to include: possible modifications to existing weapons to provide additional yield flexibility; developing improved earth penetrating weapons to target hardened and deeply-buried facilities; and explore development of low yield warheads to reduce collateral damage.[54] In order to test some of these designs, the review identifies the need to shorten the time required to restart nuclear testing. Currently, it would take an estimated 2 to 3 years to resume underground testing of nuclear weapons after a decision to do so.[55] It is clear that the current state of NNSA's test readiness will not support DoD's strategic nuclear force transformation. Some maintain that the 2002 NPR is about more than developing new weapons to confront a new enemy. "It's also about training a new generation of scientists to replace an aging cadre of Cold warriors who are heading toward retirement and taking USA's nuclear weapons knowledge with them."[56] Administration officials and nuclear weapon scientists claim that a decade of neglect at the nation's three nuclear weapons labs has hurt morale, encouraged experts to move on, and crippled efforts to recruit new personnel.[57] To counter this problem, the NPR recommends substantial funding increases for the nuclear laboratories to enhance test readiness, train new and existing personnel, conduct new field experiments and a variety of other projects it terms urgent.[58]

The mere possibility of resuming nuclear weapons testing has generated heated debate. According to the NPR, "While the United States is making every effort to maintain the stockpile without additional nuclear testing, this may not be possible for the indefinite future. Increasingly, objective judgments about capability in a non-testing environment will become far more difficult."[59] Critics are quick to point out that "The United States (already) has a large and varied suite of fully tested nuclear weapons designs that give it the capability to meet all credible future military requirements. It also has sophisticated facilities for maintaining a reliable nuclear stockpile without explosive testing."[60] The B61-11 earth penetrator, for example, was developed after the Persian Gulf War, and deployed in 1997 without a nuclear explosive test, using the existing testing and simulation capabilities of the weapons labs. J. D. Crouch, Assistant Secretary of Defense for International Security Policy, stated that there has been "no change in the administration's policy on nuclear testing. We continue to oppose Comprehensive Test Ban Treaty (CTBT) ratification and we also continue to adhere to a testing moratorium."[61] Critics question how long the testing moratorium will last and fear that a U.S. resumption of nuclear weapons testing would severely compromise the nonproliferation regime. While striving to

transform our nuclear force posture, some allege the 2002 NPR undermines the 1970 Nuclear Non-Proliferation Treaty (NPT), which 187 countries have signed and that commits the five major nuclear weapon states (United States, Russia, China, France, and the United Kingdom) to eventual disarmament.[62] Under the NPT, nuclear weapons states pledged to end the arms race and negotiate disarmament, while the other countries pledged not to acquire nuclear weapons. "If the NPR is made policy, it will undermine U.S. security by encouraging other states to pursue nuclear weapons, and thereby increase the likelihood that nuclear weapons will actually be used."[63] If another country were planning to develop a new nuclear weapon and contemplating pre-emptive strikes against a list of non-nuclear powers, the United States would likely label that nation a dangerous rogue state.

The 2002 NPR calls for the exploration of a new class of low-yield nuclear weapons capable of destroying hard and deeply buried targets such as biological weapons production facilities and command and control headquarters. While conventional weapons could potentially destroy these facilities (if less than 50 feet below the surface), the explosions could spread life-threatening agents into the atmosphere. A small nuclear weapon, however, could burn up the agents and could be engineered to tightly control the explosion and minimize fallout. "Scientists have described three classes of nuclear weapons to fulfill this mission: 'micro-nukes' with an explosive yield of about 10 tons or equivalent to 20,000 lbs of high explosives, 'mini-nukes' with an explosive yield of about 100 tons; and 'tiny-nukes' with an explosive yield of about 1,000 tons."[64] Meanwhile, some scientists don't believe that could work. "Even a mini-nuke would have to burrow down 230 feet to fully contain the blast and that is physically impossible,"[65] claims Dr. Robert Nelson, a physicist at Princeton University. "The severe adverse consequences of nuclear weapons as earth-penetrators argue against their use. Many argue that this development could embolden the United States to use nuclear weapons with less provocation than would be required today. Darryl Kimball, Director of the Arms Control Association, stated: "The NPR details and confirms that the Bush Administration is seeking to increase, not decrease, the role of nuclear weapons in U.S. foreign and military policy."[66]

CONCLUSION

In summary, a credible and effective nuclear deterrent requires proper support for all its components: attack platforms, weapon systems, command and control, the nuclear weapons stockpile, research and development, the supporting industrial base, and well-trained, highly-motivated people.[67] The reconfigured triad is intended to guarantee that U.S. policymakers will have appropriate responses to aggression, thereby bolstering deterrence. However, the

efficacy of deterrence is hard to measure and impossible to prove. "Deterrence ultimately depends not on our capability to strike first but on the assurance that we always have a capability to strike second."[68] If implemented, the 2002 Nuclear Posture Review could provide new concepts of operation across a wide range of threats, but it remains to be seen whether it would profoundly alter adversary actions more than previous approaches. Like the military services, Congress and the media remain confused about transformation. The 2002 Nuclear Posture Review succeeds in sending a very strong signal to anyone who might think about using weapons of mass destruction against the United States. However, it cannot guarantee success for deterrence. Dissent will almost certainly continue. "The President should reconsider his nuclear policies. They will not win the war against terrorism or make the country more secure. Instead they could make the world a more dangerous place."[69] Only time will tell if fiscal realities will enable the realization of a reliable national missile defense (NMD) shield and the development of miniature, low-yield nuclear weapons. As we have seen in Afghanistan, transformation is much more than a simple introduction of new technology. The transformation of DoD will require the acceleration of a more innovative culture through the processes of experimentation and training and it will not comely cheaply, nor will it come overnight. In the interim, "The credibility, safety, reliability, and effectiveness of America's nuclear deterrent must remain unquestioned."[70] Nuclear weapons are not just another arrow in our quiver. They are different, and discussion regarding lowering the threshold for their use is largely rhetoric generated for our adversaries' consumption. As for reports that, "somehow we are thinking of preemptively going after somebody (with nuclear weapons) that...we have lowered the nuclear threshold, we have done no such thing."[71] "It's been the policy of this country for a long time that the president would always reserve the right up to and including the use of nuclear weapons if that was appropriate. So that continues to be the policy."[72] Whether or not the NPR signifies transformation may be a reach too far. Perhaps a better question is, how can the United States continue to persuade and lead the international community to rein in other states' nuclear weapons programs when our program is being rejuvenated? In the process of transforming our military, America will have to walk a fine line between introducing radical change and upsetting the global security balance. Trying to increase the U.S. military advantage by creating a more useable mix of offensive and defensive weapons may cause other nations to take actions such as placing forces on higher alert, dispersing forces more widely to ensure response capability, or loosening launch control procedures to respond more quickly. Developing strategic nuclear defense policy is inherently risky business. Since the end of the Cold War, the United States has sought to reduce and de-emphasize its nuclear

capabilities while focusing on improving its conventional capabilities and their supporting infrastructures and architectures. In contrast, the 2002 NPR shines a spotlight on our nuclear strike capabilities and marks a definite shift in nuclear doctrine that could change our policies, tactics, techniques, and procedures in response to the changing security environment. Transformation is a process and not an end state. Beyond the rhetoric, U.S. senior leaders must make some hard choices to coordinate and deconflict service and joint requirements for future nuclear and non-nuclear systems. Vision without resources is an illusion and we cannot afford to gamble on America's ultimate insurance policy.

As America moves forward into the 21st century, we must preserve the critical elements of our existing strategic forces while effectively preparing for an increasingly unstable global security environment.

WORD COUNT= 6,275

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GLOSSARY

CTBT – Comprehensive Test Ban Treaty

DoD – Department of Defense

ICBM – Intercontinental Ballistic Missile

JWCA – Joint Warfighting Capability Assessment

LRA – Long Range Aviation

MIRV – Multiple Independent Reentry Vehicle

MM – Minuteman ICBM

NMD – National Missile Defense

NMS – National Military Strategy

NNSA – National Nuclear Security Administration

NPR – Nuclear Posture Review

NPT – Non-Proliferation Treaty

NSS – National Security Strategy

QDR – Quadrennial Defense Review

SNF – Strategic Nuclear Forces

SLBM – Submarine Launched Ballistic Missiles

START – Strategic Arms Reduction Treaty

WMD – Weapons of Mass Destruction

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