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Bunker Busters:

Washington's Drive for New Nuclear Weapons

Mark Bromley, David Grahame and Christine Kucia

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Bunker Busters: Washington's Drive for New Nuclear Weapons
By Mark Bromley, David Grahame and Christine Kucia

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Contents

Foreword: Ambassador Jonathan Dean 4

Foreword: Rt. Hon. Menzies Campbell MP 6

Executive Summary 7

Acronyms and Abbreviations 13

Introduction 14

CHAPTER 1: Public Policy: New Nukes Debut in US Planning 17
1.1 The Nuclear Posture Review Sets the Scene 17
1.2 Technological Considerations 20
1.3 The Question of Testing 25
1.4 New Nuclear Weapons and Congress 27
1.5 Is US Deterrence Credible? 29

CHAPTER 2: Low-Yield Nukes: Old Ideas with a New Twist 32
2.1 Development Of US Nuclear Policy, 1990-2000 32
2.2 Hardened Targets: The DoD/DOE Response Since 1990 38

CHAPTER 3: How US Choices Affect Global Security 45
3.1 NATO – The Alliance Under Pressure 45
3.2 UK-US Nuclear Relations 49
3.3 Global Agreements at Stake 53
3.4 Regional Impacts 61

CHAPTER 4: Conclusions and Recommendations 71
4.1 Immediate Steps to Prevent the Development and Testing of New Weapons 72
4.2 Confronting Security Threats: Negotiations, Not Nukes 73

Endnotes 76

Foreword

Ambassador Jonathan Dean

BASIC's most recent report, *Bunker Busters: Washington's Drive for New Nuclear Weapons*, maintains the organization's high standard of careful research and useful policy formulation. But the report's title, which refers to the Bush administration's plans to develop new, deep penetrating nuclear warheads, is slightly misleading. The report is actually an informative, comprehensive analysis of the Bush administration's nuclear weapons strategy as laid out in its Nuclear Posture Review (NPR), portions of which were leaked in January 2002.

The essence of that administration strategy, as Chapter 1 of the BASIC report points out, is that "Washington is striving to achieve a new form of deterrence by making its threat to use a nuclear weapon credible." Because the administration implausibly sees rogue nation-supplied terrorists armed with WMD scattered in numerous locations around the globe, the situations in which Washington appears to threaten to use nuclear weapons are also becoming increasingly numerous. This is why administration policy on nuclear weapons has frightened not only terrorists but people and governments all over the world.

The administration's action in dismantling the ABM Treaty had two main consequences which will reverberate down the years: It removed the prohibition against the weaponization of space and it removed the limitation on the number of missile interceptors that could be deployed by the United States, providing a durable engine for promoting the long-term growth of the world's nuclear arsenals. BASIC's report carefully documents the administration's moves toward dismantling a second key structure of multilateral arms control, the Comprehensive Test Ban Treaty, by developing arguments for new earth-penetrating warheads. Actually, the NPR seems to be arguing for development of at least three new types of nuclear warheads and some conventional ones as well: Weapons for deep penetration, weapons for destroying biological and chemical weapons, and low-yield weapons. The computational and engineering work is underway, the test site is being prepared, concerns are expressed about the aging of the existing stockpile. The administra-

tion only seems to be waiting for a precipitating incident to justify moving toward renewed testing.

The BASIC report also describes the deliberate ambiguity of the administration's position on possible use of nuclear weapons against non-weapon states: On the one hand, the administration insists that it will not use nuclear weapons against non-weapon states unless they attack the U.S. or its allies in cooperation with a nuclear weapons state. On the other hand, the administration is quite explicit that it will consider nuclear weapons in response to attack by biological or chemical weapons no matter who is responsible, weapon state or non-weapon state. This is not deliberate ambiguity, but deliberate inconsistency.

The report's recommendations for corrective action are thoughtful and realistic. Many are targeted at European allies greatly concerned at administration policy, but unwilling to carry their opposition to a complete breach with it. The Bush administration has shown considerable capacity to withdraw from unpopular positions, so this is a logical cure. But a full cure may await the Bush administration's replacement by a more pro-arms control successor or, at the very least, seeping away of the administration's current capacity to dominate the world political agenda through the War on Terrorism theme.

Ambassador Jonathan Dean was US Representative to the Mutual and Balanced Force Reduction Talks from 1978-1981. He is now Adviser on International Security Issues with the Union of Concerned Scientists in Washington.

Foreword

Rt. Hon. Menzies Campbell MP

The Nuclear Posture Review (NPR) undertaken by the US Department of Defence appears to have put in motion a major change in US nuclear strategy. The US administration has made no secret of its desire to move beyond Cold War structures and devise new security doctrines. Even before the imperative for new thinking presented by the horror of September 11, President George W. Bush had declared deterrence as "no longer enough".

The five declared nuclear weapon states under the Non-Proliferation Treaty pledged "an unequivocal undertaking" to "accomplish the total elimination of their nuclear arsenals" at the Review Conference in 2000. The same powers agreed to diminish the role that nuclear weapons play in security policies in order to minimise the possibility of their ever being used.

The cutting of arsenals as part of the Strategic Offensive Reductions Treaty (SORT) agreed by the US and Russia in May 2002 should be welcomed by all who seek a nuclear weapon free world. When the NPR talks of providing credible nuclear policies "over the coming decades", including "new generations of weapons systems", this does not augur well for the Comprehensive Test Ban Treaty.

Nuclear strategy is notoriously complex and nuclear posture notoriously secretive. The current climate of change in thinking will make the study of such issues even more difficult. *Bunker Busters: Washington's Drive for New Nuclear Weapons* is a timely contribution to the debate under way in Washington and other capitals on nuclear strategy in the new century.

Rt. Hon. Menzies Campbell MP is Liberal Democrat Foreign Affairs Spokesman in the British Parliament.

Executive Summary

Washington's interest in developing new nuclear weapons has gathered pace since the arrival of President George W. Bush's administration in January 2001. This pursuit in turn forms part of a wider reorientation of US nuclear policy that seeks to increase the relevance of nuclear weapons in US military planning and boost the credibility behind the threat of their use.

The NPR Sets the Scene

The release of the US Nuclear Posture Review (NPR) in January 2002 capped a year of discussion and debate within the Bush administration about the required size and role of the US nuclear arsenal. The NPR calls for a "New Triad", comprised of nuclear and non-nuclear offensive strike systems, active and passive defences, and a revitalised defence infrastructure. It also recommends reducing the operationally-deployed nuclear force to 1,700-2,200 warheads by 2012, but retains a "responsive nuclear force" as part of the active stockpile to be uploaded within days, weeks or months as a guard against "potential contingencies." Finally, the NPR recommends that the United States develop weapons to destroy hardened and deeply-buried targets (HDBTs), considered a key unmet capability in US defence.

Defeating HDBTs has stirred up great debate in Washington and beyond because the Pentagon is interested in developing not only improved conventional capabilities, but also new or modified nuclear weapons to fulfil the mission. Since current US conventional weapons may not be able to achieve the complete destruction of HDBTs, the NPR supports the further development of US nuclear capabilities. To carry out this mission, the Department of Energy's National Nuclear Security Administration (NNSA) has established advanced concept teams at the US nuclear weapons laboratories to proceed with research into improved earth penetrating weapons. In addition, the NPR also calls for a feasibility study to be performed on modifying an existing nuclear warhead. While public discussion of nuclear weapons in the Bush administration has remained confined to development of earth penetrating weapons, Washington has not left behind the "mini-nuke" in its plans for the future. A mini-nuke, with a yield of five kilotons or less, probably would require a completely new warhead design.

A More Aggressive Policy

The Pentagon's interest in new nuclear capabilities raises additional concerns about a possible US return to nuclear testing. While the Bush administration may stand by the current moratorium on nuclear testing, deploying a new nuclear weapon design with a low yield would require testing to ensure the integrity of the new warhead. Efforts have already been made in Congress to secure funding to reduce the time needed for test site readiness, but those attempts have been stymied thus far.

The proposals included in the NPR reflect the Pentagon's effort to enhance the credibility of the threat to use its nuclear weapons. Previously, Washington pursued a policy of deliberate ambiguity over the question of whether it is prepared to counter a chemical or biological weapons attack with nuclear weapons. Hawkish policy officials believe that the United States should now adopt a more explicit stance in this regard and thereby raise the profile of its nuclear arsenal in its military planning. The Bush administration already has started down this road by announcing that a pre-emptive strike policy would be incorporated into the National Security Strategy in autumn 2002.

US congressional oversight of funding will play a large role in the development of these initiatives. During the current session of Congress, achieving consensus between both the House and the Senate will be a greater challenge for the President than in previous years. The volatile issue of creating new nuclear weapons probably will spur great debate as the two chambers jointly consider fiscal bills in the autumn. Congressional elections in November 2002 may also sharply affect the progress of the Bush administration's implementation of the NPR's recommendations. With narrow margins between Republicans and Democrats in both chambers, no roadmap for future funding of these initiatives will be known until after the elections. However, the anticipated narrow majorities in both legislative bodies promises to keep these issues in contentious debate over the coming years.

Past as Prologue

A brief look at US nuclear policy during the 1990s shows that the development of new nuclear weapons is not a new concept. Military planners have sought new missions for nuclear weapons in the post-Cold War world, while growing concerns about the spread of underground bunkers has provided the weapons laboratories with sufficient reasons to develop new weapons.

With the collapse of the Soviet Union and the new rapprochement between East and West, many policy analysts in the early 1990s looked forward to an era in which nuclear weapons would play an ever-diminishing role in US military policy. In the background, however, pro-nuclear lobbyists were promoting new tasks for

existing nuclear forces, arguing that they should play a key role in countering "regional threats" and endorsing the development of new non-strategic nuclear weapons. These arguments were bolstered by the perception of the growing risk from WMD armed "rogue states". By 1996, it was clear that these arguments had been fed into policy when William Perry, US defence secretary, confirmed that nuclear weapons could be used in response to a chemical weapons attack. In 1997, a leaked, classified presidential document showed that the scope of nuclear targeting had been widened to include "rogue states" as well as China.

These efforts were instrumental during the 1990s as the United States became increasingly concerned with the development of underground bunkers by potential adversaries. The US government's perception of the threat posed by these facilities has been spurred by the activities of a number of countries it views as hostile, including Iraq, Libya, North Korea, and Afghanistan. Defeat of HDBTs rapidly emerged as the mission most likely to justify the development and deployment of new nuclear weapons in the post-Cold War environment. In 1997, US nuclear weapons laboratories succeeded in obtaining funds for the development of the B61-11, a modified nuclear weapon for use against HDBTs and the first new nuclear capability added to the US arsenal since 1989. However, subsequent tests showed that the B61-11 could only penetrate about 6 metres (20 feet) into dry earth when dropped from 12,200 metres (40,000 feet), making it ineffective against deeply buried bunkers.

Through a variety of study groups and projects, the question of new nuclear weapons for targeting HDBTs remained on the agenda throughout the 1990s. Despite the debut of the B61-11 and a prohibition on low-yield nuclear weapon development, the defeat of HDBTs continued to provide the most likely justification for new nuclear weapons. The NPR realised many of these long-held nuclear aspirations.

Increasing Transatlantic Tension

The NPR's recommendations will affect more than just US planning. Allies and adversaries alike have reacted to the new US nuclear posture with trepidation, wariness, and even anger. Many countries took issue with the new "hit list" of possible US nuclear force targets that included states without nuclear weapons. Countries targeted by the new policy also voiced their disagreement, and may even choose to respond to the policy shift with their own strategy or deployment changes.

NATO allies will be especially affected by the change in US policy. NATO nuclear policy must at all times be in broad agreement with US nuclear policy to avoid any internal contradiction. The United States therefore holds an effective veto over

the development of NATO nuclear policy. Washington may seek to include similar language in future alliance policy documents to extend the range of missions for its nuclear arsenal, despite concern expressed by NATO allies. Already strained by questions over its role in a post-September 11 world, NATO will have difficulty withstanding fresh splits over this issue.

The shift in US policy also raises a number of questions for the UK government, whose nuclear doctrine is closely aligned with that of the United States through NATO. Britain may be forced to modify its doctrine in order to give political cover to Washington, and the government has already hinted at such a shift. From its remarks, the UK government seems broadly in agreement with US policy. However, while London may feel safe in matching Washington on questions of first-use and targeting non-nuclear states in response to a CBW attack, it has long sought to distance itself from the idea of using low-yield warheads to target HDBTs. Additionally, the UK government would be placed in an awkward position should Washington withdraw its signature from the CTBT. Any movement away from the current US testing moratorium would present difficulties for Prime Minister Tony Blair in an area where the UK government is still prepared to argue against Washington's policies.

Arms Control Under Threat

The Bush administration's nuclear policy proposals also have implications for the interlocking matrix of global arms control agreements, showing that Washington's plans will have a far-reaching impact. US policy planners hope to deal with the deterrence needs of the modern world by improving flexibility in its offensive and defensive capabilities. These developments pose grave threats to the global arms control architecture that has taken years to put in place.

Of all the international regimes to be affected by the NPR, the Nuclear Non-Proliferation Treaty (NPT) may suffer the greatest blow. While the Bush administration professes to uphold the broad structure of the NPT, its plans contradict some of the 13 steps to advance the treaty agreed by all states parties in May 2000. Ongoing attempts to develop new, more usable nuclear weapons, and a refusal to rule out their use against non-nuclear states, raises serious doubts about Washington's commitment to ensure "a diminishing role for nuclear weapons in security policies". The threat to use nuclear weapons against a non-nuclear state runs contrary to the "negative security assurances" issued by the nuclear powers in the context of the NPT regime. Plans for new missile systems, submarines, and bombers demonstrate the Bush administration's ambition to continue, and possibly increase, the reliance on nuclear weapons in US military planning well into the 21st century.

Another treaty regime that is placed in greater jeopardy by the creation of new

nuclear weapons is the Comprehensive Test Ban Treaty (CTBT). Development of new warheads could necessitate renewed testing, with the administration claiming that the safety and reliability of the new designs cannot be derived from the results of previous testing. Upholding the test-ban moratorium while refusing to pursue ratification of the CTBT has been the Bush administration's long-standing position. However, the NPR asserts that maintaining the test-ban moratorium "may not be possible for the indefinite future". By refusing to send a representative to attend a CTBT entry-into-force meeting, and threatening to withhold contributions to the CTBT secretariat, Washington seems willing to undermine the treaty.

Increasing Regional Tensions

As well as weakening global regimes, the Bush administration's nuclear proposals will have considerable bilateral and regional consequences. In Russia, a move to develop new nuclear weapons would undoubtedly be portrayed as a failure for Putin's pro-Western policy and confirmation that the United States, while talking friendship, is working against Russian interests. Any development of new nuclear weapons by the United States could increase the Russian military's interest in maintaining and developing its own nuclear arsenal, despite Putin's efforts in recent years to steer the Russian military away from such a path of nuclear reliance. With renewed emphasis on nuclear arsenals and technologies in both Russia and the United States, the possibility of meaningful reductions in tactical nuclear weapons will disappear rapidly.

The development of low yield nuclear weapons would appear to Chinese analysts and policymakers as further proof of US hostility. The NPR highlights "a military confrontation over the status of Taiwan" as a clear example of a potential nuclear flashpoint with China. At the same time, the NPR's New Triad seems ideally designed to nullify Beijing's nuclear deterrent and could allow the United States to call China's bluff in a future confrontation over Taiwan. Consequently, China would be able to justify expanding its nuclear arsenal without eliciting strong international reaction. This stance may have serious impact on stability in South Asia as India and Pakistan seek to maintain the regional military balance.

Washington's plans also have "rogue states" very much in mind, which risks destroying the diplomatic progress that has been made with many of these countries. The NPR's plans seriously threaten areas of progress that have been strongly supported by European allies. Dialogue has all but disappeared, and the incentives for "rogue states" to remain engaged with the international community seem to be rapidly shrinking. For example, the policies of the United States towards Iran contrast strongly with the "constructive engagement" pursued by the EU and Britain, which have re-established diplomatic relations with Iran and encouraged democratisation.

Conclusions and Recommendations

Pressure in several key areas is necessary in order to move Washington policymaking away from an aggressive, unilateralist posture and to sustain existing non-proliferation and disarmament efforts.

Immediate steps to prevent the development and testing of new weapons include the following:

- Congress must withhold funding for research and development.
- European parliamentarians should be in contact with counterparts in the US Congress.
- European governments should reaffirm their opposition to nuclear testing.
- Britain must take the lead on restraining US plans.

To strengthen existing arms control mechanisms:

- US Congress must direct more funds toward constructive engagement initiatives with the international community.
- European governments must strive to implement the May 2000 NPT Plan of Action.
- Nuclear weapon states must reiterate and uphold negative security assurances.
- As a close ally to the United States, the UK government should restate its own negative security assurances in the strongest language possible.
- Washington and Moscow should agree on a treaty to reduce their stockpiles of tactical nuclear weapons.
- European leaders should support continued US-Russian dialogues on nuclear reductions.
- European governments must step up Co-operative Threat Reduction support for Russia.

To address challenges from "states of concern":

- Countries should enhance international efforts to identify and inspect underground facilities.
- The United States and its European allies must reach out to bring isolated states into arms control regimes and ensure their compliance.
- The UK government should renew its commitment to pursue a legally binding treaty on negative security assurances.

Acronyms and Abbreviations

ABM	Anti-Ballistic Missile
AUP	Advanced Unitary Penetrator
BLU	Bomb Live Unit
BMD	Ballistic Missile Defence
CBW	Chemical And Biological Weapon
CIA	Central Intelligence Agency
CTBT	Comprehensive Test Ban Treaty
CTBTO	Comprehensive Test Ban Treaty Organisation
CW	Chemical Weapon
DoD	Department Of Defense
DPRK	Democratic People's Republic of Korea
DTRA	Defense Threat Reduction Agency
EU	European Union
FY	Federal Year
GBU	Guided Bomb Unit
GPS	Global Positioning System
HDBT	Hardened and Deeply Buried Target
HMS	Her Majesty's Ship
IAEA	International Atomic Energy Agency
ICBM	Inter-Continental Ballistic Missile
LWR	Light Water Reactor
NATO	North Atlantic Treaty Organisation
NMD	National Missile Defence
NNSA	National Nuclear Security Administration
NPR	Nuclear Posture Review
NPT	(Nuclear) Non-Proliferation Treaty
PDD	Presidential Decision Directive
PLYWD	Precision Low-Yield Weapons Design
R&D	Research and Development
SACEUR	Supreme Allied Commander Europe
SDR	Strategic Defence Review
SIOP	Single Integrated Operational Plan
SLBM	Submarine Launched Ballistic Missile
START	Strategic Arms Reduction Treaty
TNW	Tactical Nuclear Weapon
UN	United Nations
USN	United States Navy
WMD	Weapon of Mass Destruction

Introduction

> *When I retired in 1994, I was persuaded that we were on a path that was miraculous, that was irreversible, and that gave us the opportunity to actually pursue a set of initiatives, acquire a new mindset, and re-embrace a set of principles having to do with the sanctity of life and the miracle of existence that would take us on the path to zero. I was dismayed, mortified, and ultimately radicalised by the fact that within a period of a year that momentum again was slowed. A process that I have called the creeping re-rationalisation of nuclear weapons was introduced by the very people who stood to lose the most by the end of the nuclear era.*[1]
>
> General George Lee Butler (Ret.), head of US strategic nuclear forces, 1991-1994

The world allowed itself to believe after the Cold War, that the dangers posed by nuclear weapons had disappeared. With the standoff between the alliances of East and West consigned to history, the justification for retaining nuclear weapons seemed a thing of the past. The peaceful withdrawal of Soviet nuclear weapons from Belarus, Kazakhstan and Ukraine, along with the decision by Argentina, Brazil and South Africa to abandon their respective nuclear weapons programmes, seemed to confirm this optimism. Humanity looked forward to the emergence of a nuclear-weapons-free world.

In spite of those successes, however, the nuclear genie refused to return to its bottle and new threats emerged to replace old ones. North Korea, Iraq and others sought to join the nuclear club, while India, Israel and Pakistan expanded their arsenals in the face of strong international protest. In addition, the five established nuclear weapon states (China, France, Russia, the United Kingdom and the United States) developed new justifications for retaining their arsenals for the indefinite future.

Leading the way has been the United States, the first country to use nuclear weapons and currently the world's dominant military power. As the threat from Mos-

cow receded, Washington broadened the mission of its nuclear arsenal during the 1990s to include dealing with "rogue states" armed with chemical or biological weapons. At the same time, pro-nuclear advocates within the US military urged the development of new nuclear weapons for use in battlefield situations.

With the arrival of the Bush administration, the pro-nuclear lobby in the United States regained a level of power and influence it had been denied during the Clinton years. The September 11 attacks and concerns about the possible terrorist acquisition of nuclear weapons have further strengthened the hand of those pushing for a more aggressive nuclear doctrine. The recent Nuclear Posture Review (NPR), funding for the development of new nuclear weapons, and the emergence of a policy of pre-emptive military action to forestall attacks against the United States all show an administration seeking to raise the profile of nuclear weapons in its military planning.

The implications of the emerging nuclear doctrine of the Bush administration, and particularly its attempt to develop new nuclear weapons, are significant. Chapter One of this report examines the current debate within the United States regarding the development of new nuclear weapons, includes a discussion of the NPR, and outlines Washington's development of new nuclear weapons principally for the defeat of hardened and deeply buried targets.

US efforts to develop lower-yield, bunker-busting strike capabilities are not new, and Chapter Two places the push for new nuclear weapons within a broader historical context. Nuclear planners have consistently sought to fill the gap left by the demise of the Soviet Union with new missions for nuclear weapons. The chapter examines Washington's ongoing concern with successfully defeating underground targets and its efforts to develop a weapon that would succeed in this mission.

International security is considerably influenced by US nuclear plans, as highlighted in Chapter Three. It examines the potential impact upon NATO, the United Kingdom, and key regional areas including China, Russia and South Asia, and describes how these actors may respond to US actions. The consequences for global non-proliferation efforts are also outlined, in particular for the nuclear Non-Proliferation Treaty (NPT) and the Comprehensive Test Ban Treaty (CTBT), which are already under strain and may not survive a concerted US effort to develop and deploy new nuclear weapons.

European governments must realise the urgency of this issue and urge the United States to take steps that would reinforce, not disintegrate, arms control mechanisms. Recommendations include proposals for immediate action to halt the

development and testing of new nuclear weapons, and longer-term steps that governments and institutions can take to strengthen existing regimes and to deal with threats that may be posed by “states of concern”.

The serious, destabilising force of the Bush administration’s proposals for new nuclear weapons should be a matter of global concern and requires action by the international community. The risk of irreversible disintegration of the nuclear arms control regime is great, and prompt efforts are needed to turn Washington away from an aggressive nuclear policy and towards productive international engagement.

CHAPTER 1
Public Policy: New Nukes Debut in US Planning

1.1 The Nuclear Posture Review Sets the Scene

The drive for new nuclear weapons is a significant focus of the Bush administration, but the desire for these new tools in the US arsenal is not new. The United States has discussed, researched, and sought development of low-yield nuclear weapons for many years, but in the current administration key nuclear proponents assumed offices of power and gave the subject sufficient political traction to make expanding the arsenal a reality.

The release of the US Nuclear Posture Review (NPR) in January 2002 capped a year of discussion and debate within the Bush administration about the required size and role of the US nuclear arsenal. Mandated by Congress and completed in the first year of George W. Bush's presidency, the NPR "sets out prudent requirements for deterrence in the 21st century," according to Donald Rumsfeld, the defence secretary.[2] The report indicates that nuclear weapons will continue to "play a critical role in the defence capabilities of the United States, its allies and friends."[3] Additionally, the review promotes a flexible force posture that would be better able to deter and respond to emerging threats.

Elements of the New Triad

A "New Triad" stands out as a distinct change from previous nuclear policy. Whereas US nuclear forces previously were spread over a triad of land-, sea-, and air-launched delivery systems, the New Triad proposes a greater range of strategic options by creating a more flexible structure, incorporating missile defences and blurring the distinction between nuclear and non-nuclear forces. Nuclear and non-nuclear weapons together provide the president with offensive strike options as the Triad's first "leg", while the proposed ballistic missile defence (BMD) system is envisaged as the second component. The third leg is a strengthened defence infrastructure that includes revitalised research, testing, and maintenance for nuclear weapons and facilities.

Missile defences will step into a newly sanctioned role in US nuclear planning. As an integrated component of Washington's New Triad, BMD development will accelerate as the Pentagon strives to provide a defence system for US territory, and possibly for allies as well. Further research and development (R&D) efforts focus on near-term and mid-term missile defence options, including the Airborne Laser, a ground-based midcourse missile system, and a sea-based missile system based on AEGIS ships.[4]

In addition, the number of deployed nuclear weapons will be reduced from their prior numbers. According to the report, "the planned force structure for 2012 comprises 14 Trident submarines (with two of the 14 in overhaul at any time), 500 Minuteman III ICBMs, 76 B-52 bombers, and 21 B-2 bombers."[5] (The current arsenal holds 550 ICBM launchers, 94 B-52s, and 21 B-2 bombers.[6]) By 2012, 1,700 to 2,200 warheads will be operationally deployed, down from the 6,500 warheads now alerted and targeted. However, many of the warheads that will be de-alerted from the operationally deployed force will move into the new "responsive infrastructure", an active stockpile that can be uploaded onto delivery systems in days, weeks or months.

New Offensive Measures

Such dramatic reductions to the US arsenal are accompanied by new enhancements to US defensive abilities. According to the review, the standard Cold War deterrence methods will not work in a new era that offers a wider spectrum of threats, from advanced conventional military capabilities to asymmetric threats posed by weapons of mass destruction (WMD). The NPR maintains that a "new mix" of nuclear, non-nuclear, and defensive capabilities "is required for the diverse set of potential adversaries and unexpected threats the United States may confront in the coming decades".[7]

The new nuclear posture will serve to assure allies that US capabilities are comprehensive enough to "dissuade, deter, [and] defeat" enemy attacks.[8] In addition, conventional weapons can play a greater role in strategic planning. In the report Rumsfeld states that "the addition of non-nuclear strike forces – including conventional strike and information operations – means that the US will be less dependent than it has been in the past on nuclear forces to provide its offensive deterrent capability."[9]

However, not all components of the "new mix" are available in the US arsenal yet. Certain missions cannot be carried out with present US technologies, either conventional or nuclear, so the NPR suggests further research and development to decide on the most effective means of accomplishing the tasks. The missions that the Pentagon seeks to better accomplish include:

- Hold at risk mobile and relocatable targets;
- Defeat critical fixed and mobile targets at long ranges;
- Increase the number of targets for each mission;
- Develop a new strike system for the submarines converted to conventional arming; and
- Defeat hardened and deeply-buried targets (HDBTs).[10]

The last point has stirred up great debate in Washington and beyond because development of "bunker busters" includes researching the efficacy of not only conventional arms, but also nuclear weapons.

To Defeat Underground Targets

The NPR explains that conventional capabilities, while robust, may not have enough force to defeat a hardened and deeply-buried target. The Department of Defence (DoD) highlighted HDBTs as a forthcoming challenge for US capabilities in a report sent to Congress in October 2001. It defined HDBTs as "an adversary's threatening and well protected assets in structures ranging from hardened surface bunker complexes to deep tunnels."[11] Buildings and facilities that an adversary may construct underground could serve as leadership shelters, host command and control operations, or act as storage depots for weapons of mass destruction. According to the Pentagon report to Congress, US intelligence estimates over 10,000 HDBTs worldwide, and anticipates a significant increase in that number in the coming decade.

Conventional weapons can destroy some of these facilities. The July 2001 report notes, "Many of them can be held at risk by current or developmental weapons, if our weapons numbers are adequate, accurate target location coordinates are known, and defences overcome."[12] However, according to the NPR, "current conventional weapons can only 'deny' or 'disrupt' the functioning of HDBTs and require the highly accurate intelligence and precise weapon delivery with a degree of accuracy and precision frequently missing under actual combat conditions. … [C]urrent conventional weapons are not effective for the long term physical destruction of deep, underground facilities."[13] Although conventional weapons may be able to strike some HDBTs, depth of burial and significant hardening of structures, such as steel or concrete reinforcement, has led the Pentagon to seek more powerful methods of destroying these targets.

Since US conventional capabilities may not be able to achieve the complete destruction of such targets, the report suggests further development of US nuclear capabilities as the way forward. The B61, modification 11 (B61-11) gravity bomb is the only earth-penetrating nuclear weapon in the US arsenal, but its limitations show the need for a more effective earth-penetrating weapon. According to the

NPR, "many buried targets could be attacked using a weapon with a much lower yield than would be required with a surface burst weapon. This lower yield would achieve the same damage while producing less fallout."[14] To carry forward this mission, the Department of Energy's National Nuclear Security Administration (NNSA) has established advanced concept teams at the three US nuclear weapons laboratories to begin further research into improved earth-penetrating weapons to defeat HDBTs.

The DoD's pursuit of flexibility in US arsenal options, including the ability to use nuclear weapons in particular missions, has stirred debate about the necessity, technological feasibility, and political ramifications of this new nuclear stance.

1.2 Technological Considerations

The defeat of hardened and deeply-buried targets has been an objective of the US military for several years, but the technology has consistently eluded efforts to begin achieving this goal. The current capabilities in the US arsenal, both conventional and nuclear, demonstrate that these long-term attempts have not yielded significant success.

Box 1: Current capabilities to strike HDBTs with conventional, air-launched munitions

Guided Bomb Unit-24 (GBU-24): This 2,000-pound, laser-guided bomb is a precision weapon that, when outfitted with a BLU-109 penetrator warhead, can be launched at low altitude up to 16 kilometres (10 miles) from the hardened target for stand-off strikes. About 1,200 GBU-24 bombs were used during the Gulf War. Enhancements of the GBU-24 in recent years include outfitting the weapon with the Global Positioning System (GPS) for increased precision.[i] The US Navy is developing a model of this bomb that includes a more sophisticated penetrator warhead (see BLU-116 AUP below), as well as a Joint Standoff Weapon in conjunction with the United Kingdom for penetrating hardened targets.[ii]

Guided Bomb Unit-28 (GBU-28): This 5,000-pound bomb was developed especially to deal with Iraqi bunkers and command centres. The GBU-28 'bunker buster' was designed in record time during the Gulf War after the US military solicited proposals from industry a week after combat began, and the bomb was deployed within a month of beginning

its construction.[iii] The 4,400-pound BLU-113 warhead, which has a reinforced steel casing, can penetrate more than 6.1 metres (20 feet) of reinforced concrete or 12,192 metres (100 feet) of earth, with a range of 87 kilometres (54 miles).[iv] The GBU-28 has most recently been used in the war in Afghanistan to strike suspected al Qaeda bunkers. Future US Air Force development of this weapon includes loading a GPS-enhanced GBU-28 onto the B-2 fighter plane and expanded testing.

Bomb Live Unit-116 Advanced Unitary Penetrator (BLU-116 AUP): This warhead comprises similar flight characteristics as the BLU-109, but with an "advanced heavy steel penetrator warhead filled with high-energy explosives that can penetrate more than twice as much reinforced concrete as the BLU-109."[v] As the next generation of penetrator warheads, the 2000-pound BLU-116 AUP will be part of the US Navy's future development of the GBU-24 (see above) as it seeks to "minimize the collateral effects associated with counterforce operations against WMD related facilities."[vi]

The newest weapons also incorporate the Hard Target Smart Fuze technology, which allows the AUP to be detonated at the optimal point for inflicting damage to the target.[vii]

Notes:

[i] Federation of American Scientists, 'Guided Bomb Unit-24 (GBU-24), Paveway III', *Military Analysis Network*, (27 Dec. 1999), URL <http://www.fas.org/man/dod-101/sys/smart/gbu-24.htm>, version current on 15 July 2002.

[ii] Abraham, S. (US Energy Sec.), and Rumsfeld, D. (US Defense Sec.), *Report to Congress on the Defeat of Hardened and Deeply Buried Targets*, July 2001, p. 17.

[iii] Federation of American Scientists, 'Guided Bomb Unit-28 (GBU-28), BLU-113 Penetrator', *Military Analysis Network*, URL <http://www.fas.org/man/dod-101/sys/smart/gbu-28.htm>, version current on 15 July 2002.

[iv] Petrie, W. (Dr), 'Some Important Advances in USAF Attack Systems', *Defence Assocations National Network News*, Vol. 7, No., 1, Spring 2000, p. 10.

[v] 'AUP', Lockheed Martin Missiles and Fire Control, 2002, URL <http://www.missilesandfirecontrol.com/our_products/strikeweapons/AUP/product-aup.html>, version current on 15 July 2002.

[vi] Office of the Secretary of Defense, 'Defense Threat Reduction Agency Procurement, Defense-Wide', *Budget Justification for the Amended FY 2002*, June 2001, p. 3.

[vii] 'Procurement, Defense-Wide', p. 4.

Admiral James O. Ellis, USN, who heads US Strategic Command, highlighted the importance of integrating non-nuclear capabilities into the force posture. He told the Senate Armed Services Committee in February 2002:

> *[I]ntegrating non-nuclear capabilities into strategic forces strengthens our joint approach to developing and operating military forces. … The integration of what had previously been considered conventional capabilities into national strategic plans allows for the development of responsive, adaptive, and interoperable joint forces that can be employed in a wider range of contingencies.*[15]

Despite these advances in technology, however, Ellis also points out that non-nuclear systems cannot accomplish the same range of ability and overall impact as a nuclear weapon. The limitations are significant, he notes. "The challenges of hard and deeply buried targets, strategic relocatable or time-critical targets, advanced conventional weapon employment, and offensive information operation targeting requires a much greater fidelity in intelligence than we currently possess," he told a Senate Armed Services subcommittee in March.[16]

Bunker Busters Join the Arsenal

In 1997, the United States added the earth-penetrating B61-11 to its nuclear arsenal. In order to avoid public discussion about possibly adding a new nuclear weapon to the arsenal, and to accommodate the 1992 nuclear testing moratorium, the United States decided to "modify" the B61-7 by adding a hardened steel casing around the nuclear explosive and reshaping the nose cone to allow for better ground penetration.[17] However, the NPR describes the B61-11, with a yield of 0.3 to 340 kilotons, as having "very limited ground penetration capability" and that it "cannot survive penetration into many types of terrain in which hardened underground facilities are located."[18] Given these shortcomings, the B61-11 is unlikely to successfully defeat such targets.

With such technological limitations to using the B61-11 as a bunker buster, the Bush administration has asked the nuclear weapons laboratories to look into research and development options for devices to defeat buried and hardened facilities. Early evidence of US activity in this field became public in the October 2001 report to Congress on HDBTs. While the Pentagon stated that "there is no current programme to design a new or modified HDBT defeat nuclear weapon," it went on to report that the nuclear weapons laboratories have re-established advanced warhead concept teams to begin researching lower-yield nuclear options, and the Defence and Energy Departments had formed a "joint Nuclear Planning Group to define the appropriate scope and option selected criteria for a possible design fea-

sibility and cost study."[19] General John Gordon (Ret.), head of the NNSA, told a Senate committee in February 2002, "The teams will carry out theoretical and engineering design work on one or more concepts, including options to modify existing designs or develop new ones."[20] At present, no money for this initiative has been specifically allocated by Congress, nor has the Bush administration requested support in its FY 2003 request. The design work, which may only be a few million dollars per year, is being funded from general research and development accounts.

In addition to establishing concept teams at the US nuclear weapons laboratories, the NPR also calls for a feasibility study and a design definition and cost study to be undertaken to determine whether an existing warhead could be modified to offer greater penetration than the B61-11.[21] NNSA's Gordon affirmed the need to explore modification of an existing warhead, saying, "It is not only in-being forces, but the demonstrable capabilities of the defence scientific, technical and manufacturing infrastructure… including its ability to sustain and adapt, that provides the United States with the means to respond to new, unexpected, or emerging threats in a timely manner."[22] According to further testimony in March 2002, the first year of the study would cost $15.5 million, and would examine both the B61 and the B83 warheads for modification. The total cost of the three-year study is estimated to be about $45 million.[23]

Studies and analysis rule out nuclear weapons as a feasible option for HDBT defeat.

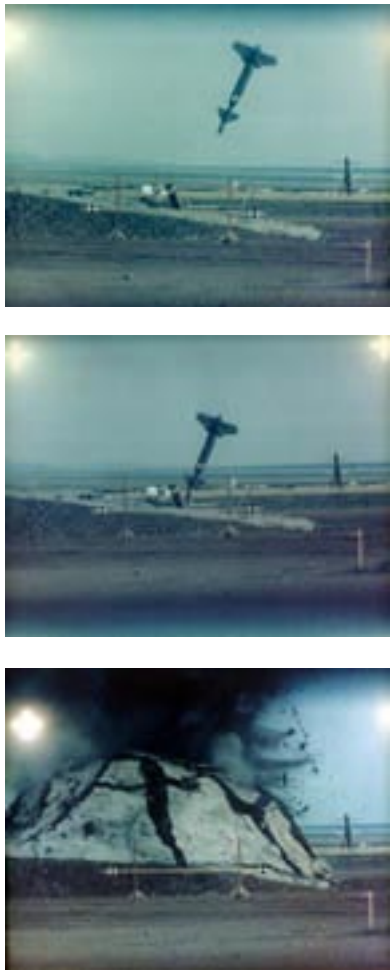
Truly Reducing Collateral Damage?

However, recent statements by the Defence and Energy Departments did not address a key scientific concern with the low-yield bunker buster. According to the October 2001 report to Congress, a nuclear weapon can destroy chemical or biological agents that underground facilities may house without spreading the WMD agent further. The report states, "It is possible to employ a much lower-yield weapon to achieve the needed neutralisation. The ability to use a lower-yield would reduce weapon-produced collateral effects."[24]

Yet other studies and analysis rule out nuclear weapons as a feasible option for HDBT defeat. A report by Dr. Robert Nelson, a physicist at Princeton University, explored the impact of a potential weapon and the opportunity for containing the radioactive blast underground. He points out that shallow nuclear impacts, such as those incurred with the B61-11, create "intense local radioactive fallout," pushing a fireball into the air and filling the air with radioactive dust and dirt.[25]

But can a nuclear weapon penetrate to that depth to successfully contain radioactivity and reduce collateral damage to the point of being "usable"? Nelson argues that the depth of penetration needed, combined with protecting the warhead and accompanying electronics from damage at impact, pose great technological obstacles to achieving this goal. The weapon would need to be fitted with a rod ten times the missile's length to sufficiently penetrate earth, concrete and steel. Also, impact at too high a velocity would melt the warhead from the heat built up as it burrows into the earth.[26]

Most importantly, Nelson notes that there is no such thing as "reduced collateral damage" in assessing the post-impact environment. With the challenges posed by the laws of physics that would govern the ability of an earth-penetrating weapon, the impact would be too shallow to contain the explosion and would generate an enormous cloud of radioactive debris. According to the study, "this mission does not appear possible without causing massive radioactive contamination."[27] According to calculations, the use of an earth-penetrating nuclear weapon in an urban environment such as Baghdad would result in tens of thousands of civilian fatalities. [28]



A precision guided munition test is performed against an underground facility. (Source: Defense Threat Reduction Agency)

And "Mini-Nukes" Too?

The public discussion of nuclear weapons in the Bush administration has remained confined to development of earth-penetrating weapons, either through modification of an existing warhead or through creation of a new one. However, Washington has not left behind the "mini-nuke" in its plans for the future. A mini-nuke,

with a yield of five kilotons or less, is considered a different category weapon than one to defeat a HDBT because it would be a completely new warhead design, and its development would require the US to conduct nuclear tests.
The Pentagon envisions a new mix of nuclear forces to defend US interests that will include a type of mini-nuke to ensure flexibility in decision-making. The NPR calls for development of capabilities "to attack mobile and relocatable targets, to defeat chemical or biological agents, and to improve accuracy and limit collateral damage. Development of these capabilities, to include extensive research and timely fielding of new systems to address these challenges, are imperative to make the New Triad a reality."[29] Advocates of mini-nukes believe that a low-yield nuclear weapon could fulfill some, if not all, of these missions and do so with less radioactive fallout than its high-yield predecessors.

Nuclear weapons proponents advocate the usefulness of a mini-nuke design to provide the credible deterrent that a high-yield weapon may not offer. Dr. Stephen Younger, a former associate director at the Los Alamos National Laboratory, is sceptical about whether an adversary would believe the president would strike with a high-yield land- or submarine-launched missile, even to address a WMD threat. He concludes, "Such a reliance on high-yield strategic weapons could lead to 'self-deterrence,' a limitation on strategic options, and consequently a lessening of the stabilizing effect of nuclear weapons."[30] Younger has since become an official in the Defence Department.

Currently, US legislation prohibits the development of a mini-nuke. The Furse-Spratt Provision, adopted in 1993 in the annual defence authorisation bill, prohibits research and development of a nuclear weapon of five kilotons or less.[31]

1.3 The Question Of Testing

Any change in the US nuclear arsenal composition prompts the question of whether further full-scale nuclear testing will take place to ensure the yield, capability, and safety of the weapon. While introducing the idea of nuclear weapons to defeat HDBTs, the Bush administration has emphasised that the current moratorium on nuclear testing will continue for now. At the press briefing on the NPR in January, assistant secretary of defence J.D. Crouch emphasised, "No change in the administration's policy at this point on nuclear testing. We continue to oppose CTBT [Comprehensive Test-Ban Treaty] ratification. We also continue to adhere to a testing moratorium."[32]
However, both the leaked NPR sections and the ensuing testimony to Congress indicated the Bush administration's ambivalence about nuclear testing. Accord-

ing to the NPR, "the need is clear for a revitalised nuclear weapons complex that will … maintain readiness to resume underground nuclear testing if required."[33] The report suggests reducing the readiness time for nuclear testing from the current two to three years down to a year or less. It also asserts that the abilities and expertise of the testing personnel has degraded since their skills have not been exercised in recent years; the NPR suggests activities for personnel that allow nuclear test-specific skills to be used. Finally, the NPR proposes measures to enhance US facilities and readiness, such as "replacing key underground test unique components;… modernising certain test diagnostic capabilities; and decreasing the time required to show regulatory and safety compliance."[34]

Washington has not left behind the "mini-nuke" in its plans for the future.

Seizing this newfound opportunity to enhance the nuclear weapons infrastructure, the Energy Department plans to increase investment in its testing activities and people. Spencer Abraham, energy secretary, noted that the New Triad "emphasises the importance of a robust, responsive research and development and industrial base."[35] According to the NNSA's Gordon, who lamented the dwindling knowledge base in the nuclear weapons laboratories, "Both the **physical and intellectual infrastructure** of the national security enterprise were built during the era of underground nuclear testing, and have eroded to the point that we are no longer able to perform some essential tasks" [author's emphasis].[36] Without the proper investment in personnel and technology in the NNSA, Gordon maintained, the department could not successfully "develop, produce, and certify new or modified nuclear warheads to meet new military requirements."[37]

While the Bush administration may stand by the testing moratorium now, its plans for new nuclear weapons may mean the resumption of nuclear testing in the future. Deploying a new nuclear weapon with a new design would require the resumption of full-scale nuclear testing to ensure the integrity of the warhead. Testing may be required for the proposed earth-penetrating weapon and would be a certainty for the mini-nuke.

Anticipating the technological challenges of developing a new nuclear warhead design, the Bush administration's policy reports and testimony point to the strong possibility of renewed nuclear weapons testing in the next few years.

1.4 New Nuclear Weapons and Congress

Due to the system of "checks and balances" in the operation of the US government, much of the implementation of Bush administration policy choices is subject to scrutiny by Congress. A key component in the relationship between the executive and legislative branches lies in the necessity to secure funding for these initiatives in the national budget.

Some of the proposals posited by the Defence and Energy Departments in the NPR rely on approval by the House and Senate committees with oversight of those budgets. The budgets passed by both chambers of Congress must be reconciled into one final document that goes to the president for his signature.

During the current session of Congress, achieving consensus between the House and Senate will be a greater challenge than in previous years. Republicans hold a slim margin in the House (224-211), while Democrats retain a one-seat majority in the Senate. With control of both the House and the Senate at stake in the November 2002 elections, there is little incentive to compromise on either side.

The divided political agendas will certainly affect the work of this session of Congress. Already, the House and Senate have weighed in on the issue of funding a plan to modify an existing weapon system to defeat a HDBT. The proposal, which would investigate whether either a B61 or B83 warhead would be suitable as a bunker buster nuclear weapon, was approved in the House defence authorisation bill. While the measure won House approval, an attempt to eliminate funding for the warhead was defeated by a vote of 172-243, showing strong disagreement among House Democrats with the Bush administration's plans.

However, that same day the Senate Armed Services Committee denied the funding for bunker buster research by a vote of 13-12 on a party-line vote. Despite the narrow vote in committee, Republicans decided not to attempt to restore the funding when the defence bill reached the Senate floor in late June. The funding for a nuclear earth-penetrator will be decided in a House-Senate conference committee on the defence authorisation bill, which will begin in July but is not expected to be completed until sometime in the autumn.

New initiatives are also being propelled by the House, spearheaded by pro-nuclear representatives in keeping with the NPR's policy outline. In the FY 2003 House defence authorisation bill, Republican Representative Curt Weldon revoked some of the 1993 Furse-Spratt legislation to allow studies on low-yield nuclear weapons, but not deployment. That language was a compromise from an earlier, stronger proposal to allow research and development to take place on mini-nukes. The

Senate had no such provision, so the issue will be resolved in the same House-Senate conference committee on the defence authorisation bill. The volatile issue of creating new nuclear weapons will spur great debate as the joint committee considers the two defence bills in the autumn.

Congressional elections in November 2002 may also sharply affect the progress of the Bush administration's implementation of the NPR's recommendations. With narrow margins between parties in both the House and Senate, no roadmap for future funding of these initiatives will be known until after the elections. However, the expected small differences in seats in both legislative bodies promises to keep these issues in contentious debate over the next several years.

Box 2: US Nuclear Weapons Life Cycle

Note: The following excerpt from the Department of Energy's 2002 budget request describes the processes for refurbishment, modification, and creation of new weapons for the US nuclear arsenal. The US Congress is currently considering the Bush administration's $15.5 million request to fund Phases 6.2 and 6.2A to develop an earth-penetrating nuclear weapon by modifying an existing warhead.

Historically, the warhead life-cycle has moved through the acquisition phase: Phase 1 – Concept Development, Phase 2 – Program Feasibility Study, Phase 2A – Design Definition and Cost Study, Phase 3 – Development Engineering, Phase 4 – Production Engineering, Phase 5 – First Production, Phase 6 – Quantity Production and Stockpile, and Phase 7 – Retirement/Storage.

Since all enduring stockpile weapons are currently in Phase 6, an expanded process has been established to extend the life of weapons in the stockpile. The process is actually an expanded subset of the Quantity Production and Stockpile Phase (Phase 6) of the historical process, and accordingly has been called the Phase 6.X process. The Phase 6.X process provides a framework to conduct and manage life extension activities for existing weapons.

The 6.X phases are:

Phase 6.0 – Quantity Production and Stockpile (Presence in the stockpile before and after the refurbishment project)

Phase 6.1 – Concept Assessment
Phase 6.2 – Feasibility Study and Option Down-select
Phase 6.2A – Design Definition and Cost Study
Phase 6.3 – Development Engineering
Phase 6.4 – Production Engineering
Phase 6.5 – First Production
Phase 6.6 – Full-Scale Production

From Department of Energy, 'Weapons Activities/Directed Stockpile Work', *FY 2002 Budget Request to Congress* (January 2001), pp. 1-2.

1.5 Is US Deterrence Credible?

The nuclear weapons policy proposals elucidated in the NPR and pursued by Washington reveal both a concerted effort to place nuclear weapons back at the heart of military planning, and a deep mistrust of multilateral arms control measures which are seen as an unwelcome check on military planning. Most importantly, the NPR outlines the Pentagon's effort to enhance the credibility of its threat to use nuclear weapons to deter attacks on the country.

Previously, Washington has pursued a policy of deliberate ambiguity over the question of whether it is prepared to counter a chemical or biological weapon attack with nuclear weapons (see Box, Section 2.2). However, many of the ardent nuclear weapons advocates that joined the Bush administration would like to move away from a policy of ambiguity. Some policy analysts believe that the United States should now adopt a more explicit stance in this regard. Michael O'Hanlon of the Brookings Institution argues that the increasing threat of biological weapons can only be countered by adopting a clear policy of responding to such an attack with nuclear weapons:

> *Making the possibility of such a response known in advance, as it did before Operation Desert Storm, could also have deterrent benefits. It could discourage a foe from the belief that by threatening to use weapons of mass destruction against US forces it could keep the casualty-averse United States from responding to its aggression.*[38]

September 11 and the subsequent anthrax scare strengthened these calls considerably. According to a *Washington Post* report from October 2001, "Conservatives

outside the administration have been calling on the administration to make an explicit threat to use nuclear weapons to respond to a biological or chemical attack."[39] In addition, Rumsfeld explained during an interview soon after September 11, "The United States, to my knowledge, has never ruled out the use of nuclear weapons. We – we have always said, if you'll think back to the Cold War, that we would not rule out the first use of nuclear weapons because there was overwhelming conventional capability that we felt that it would add to the deterrent, and so we have never done that."[40]

In spite of these calls, State Department spokesman Richard Boucher implied that Washington would maintain the policy of deliberate ambiguity. In February 2002, he publicly reiterated previous negative security assurances affirming that the United States would not use nuclear weapons against a non-nuclear weapon state unless it acted in conjunction with a nuclear state. However, he added, "If a weapon of mass destruction is used against the United States or its allies, we will not rule out any specific type of military response."[41]

Washington is striving to make its threat to use a nuclear weapon a credible one.

Enhanced credibility in Washington's threat to use nuclear weapons is also seen in the development of a new "capabilities-based" approach to ensure greater flexibility of force planning. By forming a New Triad that encompasses offensive and defensive means, and promoting the creation of new nuclear weapons, including bunker busters and mini-nukes, the Bush administration is moving away from reliance on the older, "heavy" Cold War systems of intercontinental ballistic missiles (ICBMs) and submarine-launched ballistic missiles (SLBMs). While Washington may not consider using a nine megaton nuclear bomb to counter a chemical weapons attack by a non-state actor, a small nuclear weapon could be employed for exactly that circumstance.

The Bush administration also bolstered the credibility of its threat of nuclear use in June 2002 when the White House revealed that a pre-emptive strike policy would be incorporated into the National Security Strategy in autumn 2002. This move would be the first time that "pre-emption" and "defensive intervention" would be stated options for countering states or groups that threaten to use weapons of mass destruction. According to a Pentagon official, "In the world in which we live, it's not enough to deter… You need more capability, more flexibility, more nuanced options and choices." [42] However, putting forward the strategy of using a low-yield or earth-penetrating nuclear weapon in advance of an attack will cause problems with China and Russia (which have accused the United States of wanting a

missile defence system to allow a pre-emptive strike) and will set a dangerous precedent that may be replicated, possibly with a much larger nuclear weapon.

By moving the nuclear arsenal toward a more “usable” status with lower yields, refined targeting ability, and a pre-emptive strike option, Washington is striving to make its threat to use a nuclear weapon a credible one. By adding such a capability to the US arsenal, and preserving the ambiguity of when Washington might employ it, the Bush administration is inventing a new strategy for the US nuclear arsenal.

CHAPTER 2
Low-Yield Nukes: Old Ideas with a New Twist

2.1 Development Of US Nuclear Policy, 1990-2000

During the 1990s, US nuclear policy underwent a profound shift. Initial hopes that nuclear weapons would gradually fade out of US military planning proved short lived as new targets began to emerge, including China, WMD armed "rogue states", and the possibility of a future, resurgent Russia. US nuclear policy evolved throughout the decade in a way that expanded concepts for developing new weapons to defeat HDBTs.

1990 – 1993: The last nuclear "hurrah" from the Cold War?

With the collapse of the Soviet Union and the new rapprochement between East and West, many policy analysts in the early 1990s looked forward to an era in which nuclear weapons would play an ever-diminishing role in US military policy. Some significant steps were made towards this aim. President George H.W. Bush implemented far-reaching reductions in the overall size of the US arsenal and oversaw a move away from the development of new nuclear weapons. On September 27, 1991, as part of his reductions in US nuclear forces, President Bush declared that the US would eliminate its ground-based tactical nuclear weapons, and on October 2, 1992 he signed a legislative moratorium on US nuclear testing.

However, in the background pro-nuclear lobbyists were promoting new tasks for existing nuclear forces. In the autumn of 1991, an article in *Strategic Review* by Los Alamos researchers Thomas Dowler and Joseph S. Howard III argued that the Cold War nuclear arsenal and its high yield warheads were ill-suited to future conflicts because they lacked credibility and were effectively unusable: "Would policy makers employ nuclear weapons to protect US contingency forces if conventional weapons proved inadequate or would the nature of our present nuclear arsenal 'self-deter' policy makers from using those weapons?" [43]

The article argued that "policymakers need another option between accepting defeat or using inappropriately large weapons" and called for the development of a

range of new, low-yield nuclear weapons as a means of easing any potential squeamishness by the commander in chief. The article offered three new warheads: a "micro-nuke" with a yield of 10 tonnes for destroying hardened command bunkers and airfields; a 100-tonne "mini-nuke" for placing on anti-tactical ballistic missile interceptors; and a 1,000-tonne "tiny-nuke" for use against tank and troop units. [44]

The authors of the *Strategic Review* article took the Gulf War as their point of reference, arguing that the conflict had demonstrated the impotence of the US nuclear arsenal: "The existing US nuclear arsenal had no deterrent effect on Saddam, and is unlikely to deter a future tyrant."[45] While many analysts had maintained that the Gulf War shifted the balance in military technology away from nuclear weapons and towards conventional weapons, the pro-nuclear lobby sought to stand this argument on its head. Thomas F. Ramos, a scientific adviser to the Pentagon's top nuclear weapons official, also had a piece in the autumn 1991 edition of *Strategic Review*. He argued that the Gulf War might have been different had Iraq had nuclear weapons: "No reasonable argument suggests that conventional weapons can be a credible deterrent against a nuclear-armed adversary who has the will to use his weapons"[46]

The Clinton administration's 1994 Nuclear Posture Review (NPR) eschewed the opportunity to radically alter US nuclear policy and maintained the status quo.

The US military was quick to respond to this lobbying. In late 1991, the US Strategic Air Command (later the US Strategic Command) produced the Strategic Deterrence Study, also known as the Reed Report.[47] The report argued that "the growing wealth of petro-nations and newly hegemonic powers is available to bullies and crazies, if they gain control, to wreak havoc on world tranquillity" and called for a new nuclear targeting strategy that would include the ability to assemble "a Nuclear Expeditionary Force . . . primarily for use against China or Third World targets".[48] Meanwhile, in one of his last acts as defence secretary in 1992, Richard Cheney submitted his report, *Defense Strategy for the 1990s: The Regional Defense Strategy*, to Congress. It noted that the United States had shifted its defence planning from "a focus on the global threat posed by the Soviet Union to the regional threats and challenges we are more likely to face in the future". The report argued that nuclear forces should play a key role in tackling these "regional threats" and endorsed the development of new non-strategic nuclear weapons.[49]

By the end of the first Bush administration, an influential body of opinion held that nuclear weapons could and should have a role to play in future conflicts. In 1993, it was revealed that the US Strategic Command was in the early stages of building and testing computer models that could allow the president to target aggressor states not already specified in the Single Integrated Operational Plan (SIOP).[50]

However, the election of President Bill Clinton in 1992 brought in officials with a strong background in arms control issues, giving that community more influence than it had had since the Carter administration in the late 1970s.[51] In this atmosphere, high-level opinion makers became more forthright in putting forward the view that a nuclear-free world was both necessary and desirable. Representative Les Aspin, then chairman of the House Armed Services Committee and later defence secretary, said, "a world without nuclear weapons would actually be better. Nuclear weapons are still the big equalizer but now the United States is not the equalizer but the equalizee."[52] In addition, General Colin Powell, then chairman of the Joint Chiefs of Staff, stated his commitment that "we will eventually see the time when the number of nuclear weapons is down to zero."[53] The Clinton administration extended the US nuclear test moratorium and began multilateral negotiations for a Comprehensive Test Ban Treaty (CTBT). In this environment, advocates of more aggressive nuclear targeting policies and proponents of new nuclear weapons wielded less influence.

Opinion in Congress was sufficiently strong to curb a number of budget proposals for research and development of new nuclear systems. In 1993, Representative Elizabeth Furse and Representative John Spratt successfully attached in the FY 1994 defence authorisation bill a provision prohibiting research and development of a nuclear weapon with a yield below five kilotons.[54] By late 1994, the administration could claim that all such programmes had been terminated.

In spite of the optimism engendered by the arrival of the Clinton administration, its 1994 Nuclear Posture Review (NPR) eschewed the opportunity to radically alter US nuclear policy and maintained the status quo. In particular, the policy of "leading and hedging", in which retired US warheads were kept in reserve to guard against the threat of a resurgent Russia, failed to take advantage of improved relations between Moscow and Washington.[55] However, while the 1994 NPR continued the administration's commitment to nuclear weapons, its presentation and outlook was less hawkish than that espoused by the current Bush administration.

1994 – 1998: The Empire Strikes Back

Significant Republican gains made in the November 1994 mid-term elections led to a majority view in Congress that was antagonistic to arms control and favoured

increased funding for new nuclear weapons projects. In 1996, ratification of the Chemical Weapons Convention ran into problems in the Senate. The Arms Control and Disarmament Agency lost its independence and was merged into the State Department. Congress cut funding for the Nunn-Lugar Cooperative Threat Reduction Programme, and there was vigorous support for a National Missile Defence (NMD) system and opposition to the Anti-Ballistic Missile (ABM) Treaty. While much of the justification for this shift in direction came from the risk of a resurgent Russia, this was augmented by the perceived need to counter "rogue states" such as Iran, Iraq, Libya and North Korea.

This new, conservative approach had an impact on Pentagon officials in the Clinton administration. In April 1996, a new report from the Defence Department, *Proliferation: Threat and Response*, confirmed this newly-perceived threat:

> *We received a wake-up call with Saddam Hussein's use of SCUD missiles during Operation Desert Storm and new information on his ambitious nuclear, biological and chemical weapons programmes. The proliferation of these horrific weapons presents a grave and urgent risk to the United States and our citizens, allies, and troops abroad. Reducing this risk is an absolute priority of the United States.*[56]

Coupled with the sensitivity to the growing risk from WMD armed "rogue states" came a discussion of the best means of addressing these threats. This question became a substantial feature of the nuclear debate in 1995 as analysts discussed the validity and effectiveness of a nuclear response, especially with low-yield nuclear weapons. In July 1995 a simulation exercise was conducted at the Naval War College involving two major regional crises, one being North Korea and the other a re-armed Iraq. In the case of Iraq, the conflict escalated to the point where Iraq staged substantial biological warfare attacks on Dhahran in Saudi Arabia, and other targets, leading to massive casualties. This was followed by US nuclear retaliation against Baghdad.[57]

In 1996 it became clear that these debates had fed through into policy when then-defence secretary, William Perry, confirmed that nuclear weapons could be used in response to a chemical weapons attack. Before the Senate Foreign Relations Committee in a hearing on the Chemical Weapons Convention, Perry stated:

> *The whole range would be considered . . . We have conventional weapons, also advanced conventional weapons – precision-guided munitions, Tomahawk land-attack missiles – and then we have nuclear weapons.*[58]

The second Clinton administration began in January 1997 and was markedly more conservative than the first. Madeleine Albright, US Ambassador to the UN, was drafted in as secretary of state as the administration attempted to get the Chemical Weapons Convention and NATO enlargement ratified by an increasingly hostile Senate, while Republican William Cohen replaced William Perry as secretary of defence.

In 1997, Presidential Decision Directive 60 (PDD 60) confirmed the impression of a shift in US nuclear policy. Issued by President Clinton, the Directive gave guidelines to the US military on the targeting of nuclear weapons. The contents of PDD 60 were selectively leaked to the *Washington Post* in December 1997 and confirmed that the Directive widened the scope of nuclear targeting to include increased options for targeting "rogue states".[59] According to a senior defence official, the PDD "opens up the arena of formally discussing nuclear retaliation for weapons of mass destruction."[60]

PDD 60 also allowed the US Strategic Command to include China in its nuclear targeting. China had been removed as a nuclear target in 1982 to reflect its value as a potential partner against the Soviet Union. After that, nuclear planning against China was confined to a small number of contingency options involving the strategic reserve force and non-strategic nuclear weapons. However, following concerted lobbying by DoD officials, PDD 60 brought China back into nuclear warfighting plans.[61] The Pentagon official who led the campaign to include China in US targeting plans, Franklin Miller, is now the senior official for nuclear policy at the National Security Council in the White House.

The optimism engendered by the arrival of Clinton administration faded as it became clear that nuclear weapons were to retain a prominent role in US military planning. In particular, nuclear weapons were given a more prominent role in targeting "rogue states" either to deter or respond to the use of chemical or biological weapons. However, traditional concerns about future conflict with a rising China or a resurgent Russia also played a part in rolling back some of the optimism engendered by the end of the Cold War

The last years of the Clinton administration were marked by the Senate rejection of the CTBT in October 1999 and an ambitious programme of upgrading nuclear weapon facilities under the "Science-Based Stockpile Stewardship Programme". Coming at the close of the Clinton era, the two developments gave a strong indication of the US intent to keep nuclear weapons at the heart of its military policy for years to come.

Box 3: US Nukes and CBW Attack: a Policy of "Deliberate Ambiguity"

In order to foster international goodwill and maintain key arms control processes the declared nuclear powers have made a series of commitments to never use nuclear weapons against non-nuclear weapon states. These "Negative Security Assurances" were first issued by the United States, Britain and the former Soviet Union in 1978 at the third UN Special Session on Disarmament. President Carter publicly stated that the United States would not use nuclear weapons against any non-nuclear state party to the nuclear Non-Proliferation Treaty (NPT), unless the United States or its interests were attacked "by such a state allied to a nuclear weapons state." This commitment has been repeated several times, most recently by State Department spokesman Richard Boucher in February 2002.[i]

Despite making these statements other US policy makers have been keen to maintain a potential role for nuclear weapons in deterring and responding to other weapons of mass destruction, in particular chemical and biological weapons. During the 1990-91 Persian Gulf War, President Bush wrote to Saddam Hussein with a thinly veiled threat regarding Washington's willingness to use nuclear weapons in the upcoming conflict: "Let me state, too, that the United States will not tolerate the use of chemical and biological weapons…The American people would demand the strongest possible response. You and your country will pay a terrible price if you order unconscionable acts of this sort."[ii]

While direct mention was studiously avoided the overtones of nuclear retaliation were clear enough. Subsequent debate has focussed on the question of whether the threats issued by President Bush had any kind of deterrent effect upon Saddam Hussein or whether it was the United States which was itself deterred from invading Iraq due to Baghdad's WMD arsenal. However the salient point was indisputable: in the post-Cold War world the United States envisioned its nuclear arsenal as having a role to play in deterring and pre-empting chemical and biological attacks.

In order to sustain these two conflicting policies the United States adopted a policy of "deliberate ambiguity" over the more controversial aspects of its nuclear targeting policy. While continuing to sign on to negative

security assurances as a necessary means of maintaining international goodwill, the United States has simultaneously kept its opponents guessing about how it would respond to a WMD attack. As a US official explained in 1998, "We think the ambiguity involved in the issue of nuclear weapons contributes to our own security, keeping any potential adversary who might use either chemical or biological [weapons] unsure of what our response would be."[iii]

Notes:
[i] Wright, J., 'US adopts Clinton policy on use of nuclear weapons', *Reuters*, 22 Feb. 2002.
[ii] 'Bush letter warns Saddam of stakes: "War choice is yours to make," President says in rejected message', *Washington Post*, 13 Jan. 1991, p. A20.
[iii] Priest, D., and Pincus, W., 'US rejects "No First Use" atomic policy: NATO needs strategic option, Germany told', *Washington Post*, 24 Nov. 1998, p. A24.

2.2 Hardened Targets: The DoD/DOE Response Since 1990

During the 1990s, while pro-nuclear policy analysts sought to keep nuclear weapons at the heart of US security planning, the military aimed to justify the retention of nuclear weapons by developing new missions and rationales for their use. Chemical or biological weapon attacks by "rogue states" quickly joined the threat of a resurgent Russia as the most critical deterrence task for the US nuclear arsenal. The 1990s also saw the widespread development of underground facilities by potential adversaries of the United States. As the US military sought to develop new technologies to destroy these facilities, the pro-nuclear lobby argued that only nuclear weapons could truly guarantee their destruction.

There are numerous historical examples in which states have used underground facilities in warfare. Germany used underground manufacturing plants in World War II, and Hanoi developed an extensive system of tunnels during the Vietnam War. In addition, during the Cold War both the United States and the Soviet Union located their intercontinental ballistic missiles and command and control centres in underground sites in an attempt to increase their survivability against nuclear attack.

With the necessary technology becoming ever more widely available, a large number of Washington's potential military adversaries have been able to develop underground facilities in recent years. US military planners have expressed particu-

lar concern that these governments may use these facilities to manufacture and store weapons of mass destruction (WMD). Buried deep underground, these stores, along with the command and control centres, could remain beyond the reach of US weaponry.

In the period since the end of the Cold War, the task of destroying underground facilities has risen up the list of priorities for US military planners. A recent paper on the subject from the Air College at Maxwell Air Force Base concluded, "The existence of deeply buried facilities has emerged as one of the more difficult operational challenges to confront US military forces in the twenty-first century."[62] The US government's perception of the threat posed by these facilities has been spurred by the activities of a number of countries it views as hostile.

Iraq

At the outset of the Persian Gulf War the United States quickly realised that it would need improved conventional capabilities to deal with Saddam Hussein's network of underground facilities. The 4,000-pound GBU-28 bunker buster was put together in record time to support targeting of the Iraqi hardened command bunker by adapting existing material. The weapon was not even in the early stages of research when Kuwait was invaded but was produced quickly enough to be deployed in combat. Only two of these weapons were dropped in Desert Storm, both by F-111Fs, with one weapon successfully destroying its target.[63]

The US realised the value of such weapons and invested heavily in their development, going on to produce the GBU-37, an improved version of the GBU-28. However, the Pentagon also feared that future adversaries would seek to develop improved underground bunkers in order to evade US attack. As the Defence Department's report to Congress on the outcome of the war stated, "Future adversaries may be expected to invest in protective shelters and bunkers for aircraft and [command and control] facilities."[64]

Libya

From the mid-1990s onwards US intelligence reports became increasingly concerned about the development of a suspected chemical weapons facility near the town of Tarhunah, 65 kilometres (41 miles) southeast of Tripoli. The facility is a set of underground tunnels built into the side of a mountain with a thick layer of concrete protecting the tunnels.[65] Amid growing tension over the issue between the United States and Libya, Egyptian President Hosni Mubarak sent investigators to visit Turhunah in May 1996. The investigators saw the tunnels, but reported no evidence of chemical weapons production.[66]

Past international attention on Libya's Rabta chemical facility led the Libyans to construct an underground facility at Tarhunah. (Source: Office of the Secretary of Defense, *Proliferation: Threat and Response*, April 1996.)

Amid growing international pressure, US intelligence agencies reported in early 1997 that Libya had halted construction work at the facility.[67] However, late in the year Israeli intelligence claimed that work at Tarhunah had resumed and US intelligence reports continue to express concern about the facility.[68] In 1997 additional reports emerged that Libya was constructing a 3,200-kilometre (2,000-mile) long network of underground pipes with passageways sufficiently large to move military troops and equipment. The reports alleged that the pipes intersected with the underground facility in Tarhunah.[69]

North Korea

Reports have regularly emerged of underground military developments in North Korea. Certain reports claim that Pyongyang has built an extensive network of underground tunnels complete with storage facilities and routes, suitable for use in a military invasion of South Korea.[70] More specifically, in August 1998 the *New York Times* reported that North Korea was constructing an underground nuclear

reactor. US intelligence sources claimed that 15,000 North Koreans were working on the facility at Kumchang-ri, 40 kilometres (25 miles) north of the nuclear research facility at Yongbyon.[71]

In March 1999 US inspectors were given permission to visit the facility and reported that while they found no evidence linking it to North Korea's nuclear programme, they remained unclear as to its true purpose.[72] In spite of this, US officials continue to express concern about the strategic implications of Pyongyang's excavations. In 2000 Franklin Kramer, assistant secretary of defence for international security, told the Senate Foreign Relations Committee that North Korea has "a great number of underground facilities they continue to develop."[73]

Yugoslavia

Operation Allied Force, the 1999 air campaign over Serbia and Kosovo, is seen by some as demonstrating the US military's inability to tackle underground targets. In a September 2001 interview Paul Robinson, director of the Sandia nuclear weapons laboratory in New Mexico, stated that the use of conventional weapons against Serbian bunkers had "very little effect" because it "takes far too many sorties and conventional weapons to give you any confidence that you can take out underground bunkers."[74] The conflict is also cited in the Defence Department's *Report to Congress on the Defeat of Hardened and Deeply Buried Targets* from October 2001:

> *The Persian Gulf War and the series of conflicts in the Balkans revealed that facility protection, by hardening, concealment, and defences, remains an effective response to the technology advantages in intelligence and weaponry enjoyed by the United States and its allies.*[75]

However, this assessment is not supported by the Defence Department's report from immediately after the conflict. In January 2000, defence secretary William Cohen reported that conventional allied munitions had successfully destroyed all the underground facilities they targeted. Citing a reconnaissance visit to Kosovo carried out shortly after the visit, Cohen reported that, "At every bunker site visited, the team found that NATO attacks were successful."[76] Other analysts argue that the failing of NATO's bombing campaign had less to do with Serbia's use of underground facilities than the mobility of Belgrade's forces, poor allied intelligence and a refusal to fly sorties below 4,500 metres (15,000 feet).[77]

Afghanistan

Concerns about opponents' use of underground facilities again came to the fore during the ongoing military campaign against al Qaeda and Taliban forces in Af-

ghanistan. US defence officials estimate that there are hundreds, if not thousands, of caves, tunnels, aqueducts and bunkers in the mountains and deserts of Afghanistan, the legacy of centuries of warfare and of an ancient farming technique that relies on underground water supplies. Found primarily in eastern and southern Afghanistan, the hide-outs include natural limestone caverns and tunnels, and man-made passageways.[78]

In order to tackle the Afghan facilities the Pentagon developed two new weapons systems, including a thermobaric weapon designed to fill tunnels with fireballs. The Defense Threat Reduction Agency was tasked with producing the weapon, and the first of the BLU-118 warheads were deployed in Afghanistan in January 2002. [79]

Intensive lobbying work on the part of the labs succeeded in releasing funds for the development of a modified nuclear weapon.

A New Nuclear Mission

In the post-Cold War environment, the defeat of hardened and deeply buried targets rapidly emerged as the mission most likely to justify the development and deployment of new nuclear weapons. Dowler and Howard were the first to advocate nuclear weapons for these missions in their 1991 *Strategic Review* article. Among the range of new technologies advocated by Dowler and Howard was a 10-tonne penetrating "micro-nuke" for destroying underground facilities.[80] The Reed Panel of late 1991 also concluded "the technology is now in hand to develop . . . very low yield nuclear weapons in earth-penetrators".[81]

The concept struck a cord with military planners. In 1991 the Air Force established Project PLYWD (Precision Low-Yield Weapons Design). Among other things, the project was to investigate "a credible option to counter the employment of nuclear weapons by Third World nations." Late in 1991 the Air Force formally asked the Los Alamos nuclear weapons laboratory to look into the development of a low-yield bunker buster. [82] Meanwhile in the summer of 1992, the Air Force Scientific Advisory Board endorsed the development of earth penetrators to destroy buried command centres, shifting their justifications from strategic to non-strategic missions.[83] According to its FY 1993 budget, the Defence Nuclear Agency began its own research on "a very low collateral effects nuclear weapons concept".[84] However, Congress took steps to block these activities. In particular, the Furse-Spratt amendment to the defence authorisation bill for FY 1994 prohibited any research and development on weapons with a yield of less than five kilotons.

The B61-11

The intensive lobbying work on the part of the labs succeeded in releasing funds for the development of modified nuclear weapon for use against hardened and deeply buried targets. First fielded in early 1997 the B61-11 (the B61 "mod 11" - a modification of the existing B61 warhead) was the first new nuclear capability added to the US arsenal since 1989. Before the deployment of the B61-11, the B53 was the only warhead in the US arsenal designed to tackle hardened and deeply buried targets. With a yield of approximately nine megatons, the B53 was designed for use against Soviet command bunkers in the event of nuclear war and has little utility against modern underground targets. [85]

The B61-11, a slim, 12-foot long weapon with a variable yield of between 0.3 and 340 kilotons, consists of a warhead inserted into a needle-shaped case made with depleted uranium. [86] Dropped without a parachute the weapon was designed to burrow 15 meters (50 feet) below the surface before exploding, driving the energy into the ground in order to destroy underground structures.[87] However, subsequent tests showed that the B61-11 could only penetrate about 6 metres (20 feet) into dry earth when dropped from 12,200 metres (40,000 feet). At such depth it is questionable whether the warhead could destroy very deeply buried bunkers and it would produce tremendous lethal radioactive fallout even with its low explosive yields.[88]

In 1996 the imminent deployment of the B61-11 was used to threaten Libya over its alleged development of a chemical weapons facility at Tarhunah. At a breakfast meeting with reporters on April 23, Dr. Harold Smith, then-assistant to the secretary of defence, outlined US conventional and nuclear capability for destroying the facility: Smith explained that the United States had no conventional weapon capable of destroying the plant from the air. He noted, however, that a new earth-penetrating B61 nuclear bomb could take out the plant and that the new bomb would be ready for possible use by the end of this year. [89]

The Search Continues…

Deployment of the B61-11 failed to check the ongoing search for new capabilities for destroying underground facilities. In 1997 the under-secretary of defence, Paul Kaminski, commissioned a report by the Defence Science Board on the threat posed by the "growing number of underground facilities in nations unfriendly to the USA". In commissioning the study Kaminski referred particularly to two sites: the underground chemical weapons facility at Tarhunah in Libya, and "a huge underground facility in Russia whose purpose is undetermined." The board was asked to examine the military's ability to find, assess and neutralise the facilities. [90] The study, completed in 1998, "documented certain limitations of current weapon and [intelligence, surveillance and reconnaissance] technologies." [91]

In addition, the Departments of Defence and Energy conducted an Analysis of Alternatives during 1997-1999 to address intelligence and strike issues related to destroying HDBTs. The study recommended the service not develop new weapon concepts but rather to buy more of the currently available or projected weaponry with modest cost modifications. However the study did find that "not all HDBTs could be defeated by current or conceptual weapons" and the study "did not address agent defeat or nuclear solutions."[92] In order to compensate for this gap the Departments of Defence and Energy initiated a classified study in 1997 to address nuclear solutions for holding the most challenging HDBTs at risk. Project SAND DUNE was convened in 1997, completed in the first quarter of 1999 and examined the role that nuclear weapons could play in tackling HDBTs.[93] Its findings remain classified.

Through a variety of study groups and projects the question of new nuclear weapons for targeting HDBTs remained on the agenda throughout the 1990s. However, the Congressional legislation of 1994 remains an important barrier to the development of new weapons with a yield lower than five kilotons. Despite this prohibition and the development of the B61-11, the defeat of HDBTs continues to provide the most likely justification for new nuclear weapons.

CHAPTER 3
How US Choices Affect Global Security

The NPR's recommendations will affect more than just US planning. The opinions of allies and leaders of international security institutions will play a fundamental role in either allowing the US plans to proceed, or throwing roadblocks onto the new US nuclear roadmap. In addition, the close military relations between the US and its allies means that changes in US nuclear doctrine are likely to have an effect on the policies of NATO and Britain.

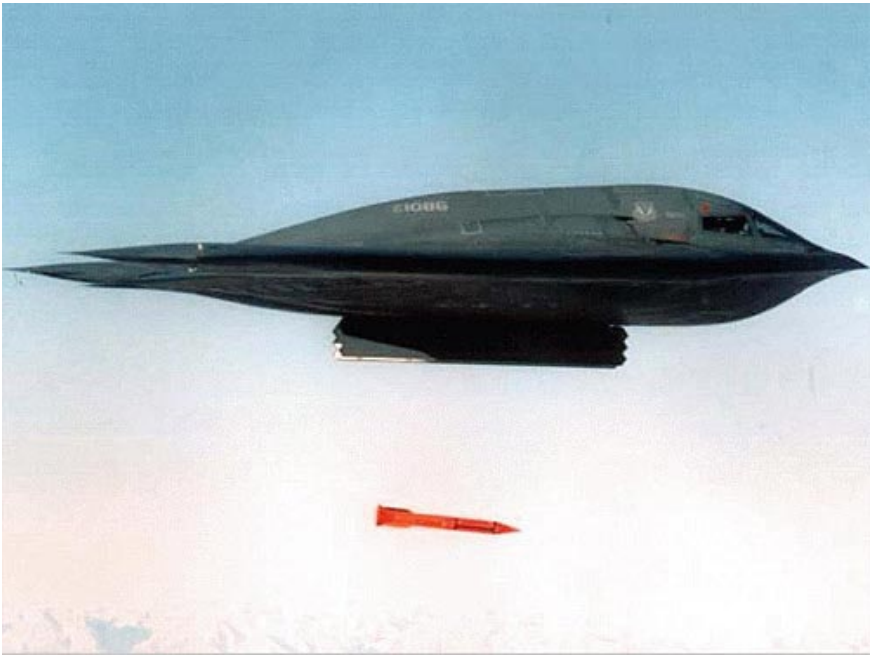
3.1 NATO – The Alliance Under Pressure

European allies in NATO have been increasingly concerned about US policy since the beginning of the Bush administration. Transatlantic tensions surround a number of areas including defence, trade and environmental issues, with European leaders regularly decrying what they perceive as an increasingly unilateralist streak in US foreign policy. In February 2002 the French foreign minister, Hubert Vedrine, stated: "In the past year the United States has taken a number of decisions in international affairs that we have regretted. I am thinking of her refusal to ratify the International Criminal Court, Kyoto Protocol, treaty on anti-personnel landmines, her withdrawal from the ABM Treaty and many other things as well."[94]

Similarly many allies have spoken out strongly against the US concept of an "axis of evil" and indicated that any attempt to extend the war on terrorism to Iraq would have damaging repercussions for NATO solidarity. In the past the allies (with the exception of Britain), have refused to participate in bombing raids on Iraq or to lend the US as much support as it wanted. The German foreign minister, Joschka Fischer, said in February: "An Alliance partnership among free democrats can't be reduced to submission. Alliance partners are not satellites. All European foreign ministers see it that way. That is why the phrase 'axis of evil' leads nowhere."[95]

Concern has also been expressed over the development of a more aggressive nuclear policy on the part of Washington, a shift highlighted by the NPR. Allies and adversaries alike reacted to the new US nuclear posture with trepidation, wariness, and outright anger. In particular, many countries took issue with the new "hit list" of possible US nuclear force targets, including states without nuclear weapons. Britain's Menzies Campbell, shadow foreign secretary for the Liberal Democrats, expressed strong displeasure with the US plan, noting: "America has said that it can now act unilaterally and that it could use nuclear weapons against nations who do not have nuclear capability. Britain will have to think very carefully now about its support for systems such as the national missile defence system."[96]

These concerns are likely to increase if the United States presses ahead with the development of new nuclear weapons for targeting HDBTs and further modifies its military doctrine to allow for their use. This is an issue of particular concern for NATO allies given NATO's continued reliance on nuclear weapons and the close coordination between NATO and US nuclear policies.



A B-2 Spirit Bomber from Whiteman Air Force Base, Mo., drops a B61-11 "bunker busting" nuclear bomb casing. *(Courtesy US Air Force)*

NATO-US Nuclear Policy

At present US nuclear weapons are deployed at bases in seven NATO member countries outside the United States (Belgium, Germany, Greece, Italy, the Netherlands, Turkey and the United Kingdom). The Nuclear Planning Group, which determines the nuclear policy of NATO, consists of both nuclear and non-nuclear NATO states. This group discusses questions of nuclear strategy and operational planning, analyses deployment measures and determines consultation mechanisms for the actual use of nuclear weapons.[97] However, NATO nuclear policy must be in broad agreement with US nuclear policy to avoid internal contradictions at the Pentagon. The United States therefore holds an effective veto over the development of NATO nuclear policy and has controlled its evolution since nuclear weapons were first assigned to NATO. [98]

In the 1950s and 1960s, NATO doctrine was based on the US doctrine of Mutually Assured Destruction.[99] However, from 1967 to the early 1990s, NATO doctrine was changed to one of "flexible response" in line with US doctrine.[100] NATO continues to maintain this policy, which allows it to be the first to introduce nuclear weapons into a conflict, including in reply to an attack with conventional weapons.[101] Since the end of the Cold War, as US nuclear doctrine has changed to emphasise deterring the use of weapons of mass destruction, NATO doctrine has also been adapted to give more emphasis to deterrence of weapons of mass destruction.

How the NPR Might Affect NATO

The major impact of further shifts in US nuclear policy will be the extent to which it places further strains on the unity of the NATO alliance. In reference to the NPR, the German deputy foreign minister, Ludger Volmer, stated, "Such a strategy could endanger the disarmament and non-proliferation of nuclear weapons." Volmer called US plans to use nuclear arms against non-nuclear states "extremely questionable."[102] In addition, at the NPT Preparatory Conference in April 2002 the Canadian Ambassador, Christopher Westdahl, stated, "signals from some nuclear-weapon states regarding their nuclear arsenals occasion uncertainty and concern."[103] Already strained by questions over its role after September 11, NATO will have difficulty withstanding fresh splits over this issue.

However, the NPR also implies that some of the US policy changes could have an impact upon NATO nuclear policy:

> *DoD [the Pentagon] will not seek any change to the current [NATO] posture in FY02 but will review both issues to assess whether any modifications to the current posture are appropriate to adapt to the changing threat environment. A plan is already*

> *underway to conduct a NATO review of US and allied dual capable aircraft in Europe and to present recommendations to Ministers in summer of 2002. Dual capable aircraft and deployed weapons are important to the continued viability of NATO's nuclear deterrent strategy and any changes need to be discussed within the alliance.*[104]

The results of the NATO review were presented for approval at the Defence Ministers Meeting on June 6-7, 2002. It is unlikely that the NPR will cause a major overhaul of NATO nuclear policy, and the document's tone implies that Europe will retain a dual-capable aircraft capability beyond the retirement of Tornado and F-16 aircraft some time in the next decade. However, with the recommendations being classified, scrutiny of the implications for NATO are impeded. One possibility is that Washington will seek to provide political cover for additional missions of its nuclear arsenal by including similar language in future NATO policy documents.

At the very least, the NPR makes future attempts by NATO states to diminish the role of nuclear weapons in military planning by removing them from Europe less likely. This is especially pertinent at a time when the question of Russia's arsenal of tactical nuclear weapons is moving up the list of proliferation threats. In a February 2002 report, the CIA explained:

> *The [Russian nuclear weapons] security system was designed in the Soviet era to protect weapons primarily against a threat from outside the country and may not be sufficient to meet today's challenge of a knowledgeable insider collaborating with a criminal or terrorist group.*[105]

Russia's tactical nuclear weapons pose an even greater problem because of their smaller size and the lack of a reliable inventory of their quantity and location. Estimates of the number of Russian tactical nuclear warheads range from 4,000 to 12,000.[106] While Russia continues to take steps to fulfil its obligations under the terms of its Presidential Nuclear Initiatives of 1991, completion is hampered by financial constraints. At the recent Preparatory Conference (PrepCom) for the 2005 NPT Review Conference, the Russian delegation noted:

> *Russia has practically finished the implementation of all initiatives concerning TNW [tactical nuclear weapons] reduction, except the elimination of nuclear munitions of the Army. The elimination of nuclear warheads for land-based tactical missiles, nuclear artillery projectiles and nuclear demolition devices is*

> *impeded by lack of funding and by the implementation of other legal commitments on elimination and reduction in conventional weapons, strategic offensive arms (START I) and CW dismantlement. If adequate funding is provided, Russia plans to fulfil completely the initiatives in the sphere of TNW by 2004.*[107]

However, the continued retention of tactical nuclear weapons by NATO states represents an additional barrier holding back the development of further negotiated controls on Russia's arsenal of tactical nuclear weapons. The Kremlin has repeatedly asserted that it will not consider negotiations to control its tactical nuclear arsenal until the United States removes its nuclear weapons from Europe.[108] At the recent PrepCom, the Russian delegation noted: "As of today, all Russia's nuclear weapons are placed within the limits of her national territory. In this connection we would like again to draw the attention to Russia's proposal that all nuclear weapons should be brought back to the territories of possessor-states."[109]

With Washington seeking to expand its nuclear missions and possibly design new nuclear weapons, there will be strong US pressure upon NATO to resist withdrawal of weapons from Europe.

3.2 UK-US Nuclear Relations

British nuclear policy is closely intertwined with that of the United States on many levels. The UK Trident warhead is closely based on one of the US Trident warheads, the W76, and was tested at the US Nevada Test Site. In addition, Britain's Trident submarines use US Trident II D5 missiles produced and serviced in the United States, held at the Kings Bay Submarine Base in Georgia and tested at the US Eastern Test Range, off the coast of Florida. There is also a high level of cooperation between the US nuclear weapons laboratories and Britain's Atomic Weapons Establishment on the management of the Trident warhead.[110] In recent years this level of cooperation has increased with the number of British personnel visiting the Nevada Test Site rising from nine in 1999 to 40 in 2001.[111]

Britain's nuclear doctrine is also closely aligned with that of the United States through the commitment of its Trident nuclear force to NATO. Since the United States originally agreed to sell Polaris to the UK Government under the terms of the 1962 Nassau Agreement and the 1963 Polaris Sales Agreement, Britain's strategic nuclear force has been "committed to NATO and targeted in accordance with NATO policy and strategic concepts under plans made by the Supreme Allied Command Europe (SACEUR)".[112] NATO doctrine is, in turn, kept closely aligned with Washington's policy. Following the election of a Labour Govern-

ment in 1997, this arrangement was reaffirmed in the 1998 Strategic Defence Review (SDR): "Britain's Trident force provides an operationally independent strategic and sub-strategic nuclear capability in support of NATO's strategy of war prevention and as the ultimate guarantee of our national security".[113]

The NPR makes future attempts by NATO states to diminish the role of nuclear weapons likely.

Thus, British nuclear posture remains grounded in NATO's concept of nuclear deterrence, which in turn is based predominantly on US nuclear doctrine. In his February 2001 joint statement with Bush, the prime minister, Tony Blair, gave his backing to the Bush administration's policy of using "offensive systems", potentially including the use of nuclear weapons, to "deter" WMD threats. Both leaders also agreed to strengthen "counter-proliferation measures".[114] Taken together, these statements indicate that British nuclear thinking at the highest level remains closely linked with that of the United States.

Implications of NPR for Britain

The shift in US policy raises a number of questions for the UK government. If the United States presses ahead with the development of new nuclear weapons and seeks to further modify its doctrine to allow for their use against hardened and deeply buried targets, Britain may be forced to similarly modify its own doctrine in order to give political cover to Washington. The UK government has already shown some signs of matching the NPR's increased willingness to target non-nuclear states.

Previously Britain had issued the same carefully worded negative security assurances as the United States while simultaneously pursuing a policy of deliberate ambiguity over the question of using nuclear weapons in response to chemical or biological weapon attack. In 1998 the government defence spokesperson, Lord Hoyle, said: "A state which chose to use chemical or biological weapons against the United Kingdom should expect us to exercise our right of self defence and to make a proportionate response."[115]

In March 2002, however, Britain went further and sent out a clear signal that it is prepared to match the more aggressive tone displayed in the NPR. Geoff Hoon, the secretary of state for defence, told the Defence Select Committee that if a country were to use weapons of mass destruction against forward deployed UK troops, Britain "would be willing to use [its] nuclear weapons."[116] Within a week Hoon reiterated this pledge in a television interview: "[I]f there is a threat to our

deployed forces, if they come under attack by weapons of mass destruction, and by that specifically chemical [or] biological weapons, then we would reserve the option … to use nuclear weapons."[117] He also stated that "if there were strong evidence of an imminent attack, if we knew that an attack was about to occur … we could use our [nuclear] weapons to protect against it."[118]

Hoon's statements are far more explicit than the previous carefully worded threats. Coming so close after the release of the US NPR, it is hard not to conclude that they were directly influenced by the document. If so, they match a long history of close correlation between US and UK nuclear policy, one that bodes ill for those wishing to stop Washington's lowering of the nuclear threshold. As the closest ally of the United States, Britain is best placed to raise a dissenting voice over the current US policy direction and oppose the development of new nuclear weapons. Instead, the UK government seems broadly in agreement with US policy, content to match it step for step.

While the United Kingdom may feel safe in matching the United States on questions of first-use and the targeting of non-nuclear states in response to a CBW attack, it has long sought to distance itself from the idea of using low-yield warheads to target deeply buried and underground targets. In a 1993 speech, Malcolm Rifkind, then-secretary of state for defence, outlined the UK government's position:

> *There is sometimes speculation that more so-called "usable" nuclear weapons – very low-yield devices which could be used to carry out what are euphemistically called "surgical" strikes – would allow nuclear deterrence to be effective in circumstances where existing weapons would be self-deterring. I am thoroughly opposed to this view. The implications of such a development of a new war-fighting role for nuclear weapons would be seriously damaging to our approach to maintaining stability in the European context, quite apart from the impact it would have on our efforts to encourage non-proliferation and greater confidence outside Europe. This is not a path that I would wish any nuclear power to go down.*[119]

Britain is unlikely to seek to acquire any new low-yield nuclear weapon from the United States, but it may choose to provide political cover for Washington's developments by further modifying its own nuclear policy. This step will provide ammunition to those seeking to highlight the discrepancies between Britain's possession of nuclear weapons and its obligations under international law. The Trident Ploughshares group has been particularly successful in this regard. The group was established in 1998 to push "the British government into abiding by the Advi-

sory Opinion of the International Court of Justice of 8 July 1996 that decided that the use or threatened use of nuclear weapons is generally illegal under international law because of the unique, indiscriminate and long-lasting damage their use would inflict on civilians and the global environment."[120]

On 4 October 2001, Trident Ploughshares achieved its most notable success during a court case at Manchester Crown Court for two campaigners charged with damaging testing equipment on HMS Vengeance. The couple were discharged when the jury could not reach a verdict on the charge of criminal damage against them and the prosecutor confirmed that the Crown would not seek a retrial.[121] The position of Trident Ploughshares in future court cases will be considerably strengthened if the UK matches the shift in US policy and increases the range of circumstances in which it would contemplate nuclear use.[122]

The UK government will also be placed in an extremely awkward position should Washington withdraw its signature from the CTBT as precursor to restarting nuclear testing, either as a means of verifying the existing stockpile or developing new nuclear weapons. Along with France, the United Kingdom was the first nuclear-weapon state to ratify the CTBT on April 6, 1998. The government also played a strong role in lobbying the United States prior to the unsuccessful attempt to ratify the CTBT in 1999. At the time Blair wrote a joint article with the French president, Jacques Chirac and the German chancellor, Gerhard Schröder, urging US ratification. The letter claimed that: "Failure to ratify the Comprehensive Test Ban Treaty will be a failure in our struggle against proliferation" and went so far as to state that "Rejection would also expose a fundamental divergence within NATO".[123]

British nuclear thinking remains closely linked with that of the United States.

Any movement away from the current US testing moratorium would present a headache for Blair in an area where the UK government is still prepared to speak its mind about its opposition to Washington's policies. In evidence before the Foreign Affairs Select Committee in November 2001 the foreign secretary, Jack Straw, noted:

> *The United States is one of the countries, along with India and Pakistan and a number of others, which refused to sign [sic] the CTBT. I doubt we will get them to move, but we might. They – the US – have however agreed not to operate tests and to observe a large part of what is in the Treaty.*[124]

The foreign secretary also said that "this is one area where there are significant differences of view between ourselves and the United States and it is important that we should be open about that." If the US were to take its signature off the CTBT and resume nuclear testing these areas of difference would presumably widen even further. Despite the foreign secretary's assurances the Select Committee concluded,

> *We note the importance of ensuring a comprehensive ban on nuclear testing, and believe that unilateral cuts in the US nuclear arsenal do not substitute for the establishment and maintenance of global non-proliferation agreements. We recommend that the government renew its efforts to press the United States to ratify the Comprehensive Test Ban Treaty.*[125]

However, Britain's ability to voice concern about such a development could be hamstrung by its close relationship with and dependence on the US on nuclear policy issues. For example, on February 14, 2002 the United Kingdom participated in a sub-critical nuclear test conducted by the United States at the Nevada Test Site. The Energy Department has been conducting sub-critical nuclear tests since 1995. Tests are sub-critical on the grounds that no critical mass is formed, so no self-sustaining nuclear fission chain reaction occurs.[126] The experiments are permitted within the CTBT, though they can be used not only to ensure the safety and reliability of the US nuclear stockpile, but also to develop new warhead designs.[127] In the past, the British government has acknowledged that it receives briefings on the scope and outcome of US sub-critical experiments, but had never previously participated in them.

While the safety and reliability of the UK nuclear arsenal is an important concern there is a real danger that the UK's shift in policy could conflict with Britain's disarmament commitments and block the government from raising objections to US policy.

3.3 Global Agreements at Stake

The Bush administration's nuclear policy proposals have implications that extend beyond US borders. The interlocking nature of global arms control agreements, with each new one building upon earlier treaties or regimes, suggests that Washington's plans also will be far-reaching. The NPR's proposals are a solid blueprint for future US choices, but also foreshadow the potential weakening global arms control in favour of defensive, unilateral policies.

Nuclear Non-Proliferation Treaty (NPT)

Of all the international regimes to be affected by the NPR, the NPT may suffer the greatest blow. Already an unstable international regime, the NPT was implicitly or overtly damaged by several of the NPR's recommendations

While the Bush administration has voiced doubts about several multilateral arms control agreements since its first days in Washington, it has reiterated its strong support for the NPT, a treaty with the purpose of curtailing the spread of nuclear know-how and cutting existing arsenals. For example, the United States backed the final communiqué from the NATO Foreign Ministers meeting in May 2001 which stated, "We reaffirm our determination to contribute to the implementation of the conclusions of the 2000 NPT Review Conference".[128] In addition, a joint communiqué issued by Bush and Putin on November 13, 2001 committed the United States to undertake "efforts to strengthen the nuclear Non-Proliferation Treaty".[129] Ambassador Norm Wulf restated Washington's support for the NPT during the April 2002 Preparatory Committee meeting for the NPT's 2005 Review Conference when he said, "The United States continues to view the NPT as the bedrock of the global efforts to prevent the spread of nuclear weapons."[130]

Among Washington's reasons for supporting the NPT is the treaty's valuable role in preventing proliferation. Since the NPT's entry into force in 1970, a number of states have abandoned their nuclear weapons programmes and joined the NPT as non-nuclear states, including Argentina, Belarus, Brazil, Kazakhstan, South Africa, and Ukraine. While North Korea and Iraq may be seen as failures of the NPT, it was only through the mechanisms established by the treaty that their nuclear programmes were first discovered and then halted.

A report from the US Defence Threat Reduction Agency (DTRA) supports this assessment. It concludes that the collapse of the NPT would encourage "states to review their nuclear policies and to adopt more aggressive policies. In the long run, this strategic environment would likely foster vertical and horizontal proliferation of nuclear weapons."[131] The dangers posed by a weakened NPT are real and universally recognised.

NPT Stipulations Versus US Choices

However, while the Bush administration earnestly professes to uphold to the broad structure of the NPT, its plans for new warhead designs, and increased role for nuclear weapons in US military strategy cast serious doubt on Washington's commitment to the treaty. Under-secretary of state John Bolton told *Arms Control Today* in February 2002, "We take our obligations under the NPT very seriously. In terms of what was said at the 1995 and 2000 NPT Review Conferences, we're reviewing all of that in the context of our preparation for the 2005 NPT Review Conference."[132]

In May 2000, all states parties to the NPT agreed to 13 "practical steps" toward global nuclear disarmament. However, the Bush administration nuclear plans contradict several of the steps that the United States supported only two years ago. Under the Article VI of the treaty, nuclear weapon states are committed to engaging in "good faith" participation in international negotiations leading to nuclear disarmament. The 2000 NPT Review Conference committed nuclear powers to apply "the principle of irreversibility" to "nuclear disarmament, nuclear and other related arms control and reduction measures." Under the May 2000 terms, the nuclear powers also committed to pursuing "a diminishing role for nuclear weapons in security policies to minimise the risk that these weapons ever be used and to facilitate the process of their total elimination." Attempts to develop new, more usable nuclear weapons, and a refusal to rule out their use against non-nuclear states raises serious doubts about Washington's commitment to this pledge.

The NPR's proposals foreshadow the potential weakening of global arms control.

Negative security assurances reversed? The revelation in the NPR that nuclear weapons could be used against non-nuclear countries that have signed the NPT is controversial as well. In discussing the "contingencies" for which the United States must plan nuclear retaliation, the NPR notes that "North Korea, Iraq, Iran, Syria, and Libya are among the countries that could be involved in immediate, potential, or unexpected contingencies."[133] Citing extensive WMD and missile programmes in those countries, the NPR leaves open the possibility for the United States to retaliate with nuclear force against a threat or use of WMD from a non-nuclear member of the NPT.

This threat of nuclear use against a non-nuclear state runs contrary to the "negative security assurances" issued by the nuclear powers in the context of the NPT regime. Negative security assurances were first issued by the United States, Britain and the former Soviet Union in 1978 at the third UN Special Session on Disarmament. President Carter publicly stated that the United States would not use nuclear weapons against any non-nuclear state party to the nuclear Non-Proliferation Treaty (NPT), unless the United States or its interests were attacked "by such a state allied to a nuclear weapons state".[134]

Before the 1995 NPT Review Conference the nuclear powers again issued assurances to non-nuclear states regarding the use of nuclear weapons. US secretary of state Warren Christopher said,

> *The United States reaffirms that it will not use nuclear weapons against non-nuclear-weapon states parties to the Treaty on the Non-Proliferation of Nuclear Weapons except in case of an invasion or any other attack on the United States, its territories, its armed forces or other troops, its allies, or on a state towards which it has a security commitment, carried out or sustained by such a non-nuclear-weapon state in association or alliance with a nuclear-weapon state.* [135]

That pledge – and similar pledges made at the time by the United Kingdom, China, France, and Russia – was then noted in UN Security Council Resolution 984, which was approved in April 1995. This resolution played a crucial role in ensuring the success of the 1995 NPT Review Conference, which resulted in the treaty's indefinite extension. Their importance is emphasised by Ambassador Thomas Graham, Jr., head of the US delegation to the 1995 NPT Review and Extension Conference:

> *Numerous non-nuclear-weapon states made their decision to join the NPT after this commitment was announced. This commitment (referred to as a negative security assurance) was reaffirmed in April 1995 by the nuclear weapon states in the context of the 1995 NPT Review and Extension Conference. Without it, the indefinite extension of the NPT might not have taken place… states parties to the NPT agreed to its indefinite extension relying on this reaffirmation.*[136]

The NPR provides an undeniable threat to the continued credibility of US negative security assurances. The NPR does not refer to any nuclear programmes in the countries listed, and simply justifies their inclusion because "all have long-standing hostility towards the United States and its security partners. All sponsor or harbour terrorists, and have active WMD and missile programmes."[137]

A diminishing role for nuclear weapons in security policies? Among the most contentious issues related to the NPT is Washington's intention to develop new nuclear weapons. While the NPR offers a role for conventional weapons in the New Triad, it also indicates an increased role for nuclear weapons in US military planning. The decision to develop new nuclear capabilities for destroying hardened targets, combined with plans for new systems to be deployed starting in 2020, shows a continuation of the strong role that nuclear weapons play in US strategy.

The total elimination of nuclear arsenals leading to nuclear disarmament? In addition to calling for a three-year study into the development of a low-yield earth

penetrating nuclear warhead, the NPR outlined plans for the deployment of new missile systems, submarines, and bombers. Washington is to begin studies for a new intercontinental ballistic missile to be operational in 2020, a new submarine-launched ballistic missile and nuclear submarine in 2030, and a new heavy bomber in 2040, as well as new warheads for all of them.[138] These plans demonstrate the current administration's ambition to continue, and possibly increase, the reliance on nuclear weapons in US military planning well into the 21st century. Such activities do not fit with the May 2000 commitment to nuclear disarmament, and – together with the desire to develop bunker busters and mini-nukes – send a clear signal to the rest of the world that Washington still views nuclear weapons as a unique and indispensable military tool.

The principle of irreversibility as part of nuclear disarmament? Bush promised in late 2001 to cut the US nuclear arsenal to 1,700-2,200 operationally deployed warheads within 10 years. However, the NPR indicates that the "reductions" in warheads would amount to little more than moving them into active and inactive reserves. Reallocating them into different categories leaves the warheads available for redeployment and re-alerting.

To their credit, Bush and Russian President Vladimir Putin recently codified these cuts in writing, promising limits of 2,200 for each country. However, the United States managed to retain the ability to reverse cuts made to the arsenal, either with a 90-day withdrawal notice or after the treaty expires in 2012. Recent reports indicate that the United States could have 2,400 strategic nuclear warheads in its active stockpile in 2012, in addition to the 1,700-2,200 operationally deployed warheads.[139]

The Comprehensive Test-Ban Treaty (CTBT)

Another treaty regime put in jeopardy by the NPR's plans is the CTBT. The review suggested further research into the development of a new nuclear warhead, and anticipates a new generation of nuclear weapons to be deployed starting in 2020. Development of a new warhead design will require the resumption of nuclear testing, ending the current international testing moratorium and destroying the CTBT.

The Bush administration's disregard of the CTBT precedes the NPR. During his campaign for the presidency, Bush decided that he would not seek out or support the ratification of the treaty. The treaty was signed by President Bill Clinton in 1996 but rejected by the US Senate in 1999. Early in his campaign Bush remarked, "It offers only words and false hopes and high intentions – with no guarantees whatever. We can fight the spread of nuclear weapons, but we cannot wish them away with unwise treaties."[140]

The Bush administration's position has been to uphold the testing moratorium while refusing to support CTBT ratification. In January 2001, Colin Powell announced during his confirmation hearing to become secretary of state that the administration would not pursue CTBT ratification; nevertheless, he noted, "At the same time President-elect Bush has indicated he has no intention of resuming testing as part of our efforts. We do not see any such need for such testing in the foreseeable future."[141]

The Bush administration's disregard of the CTBT precedes the NPR.

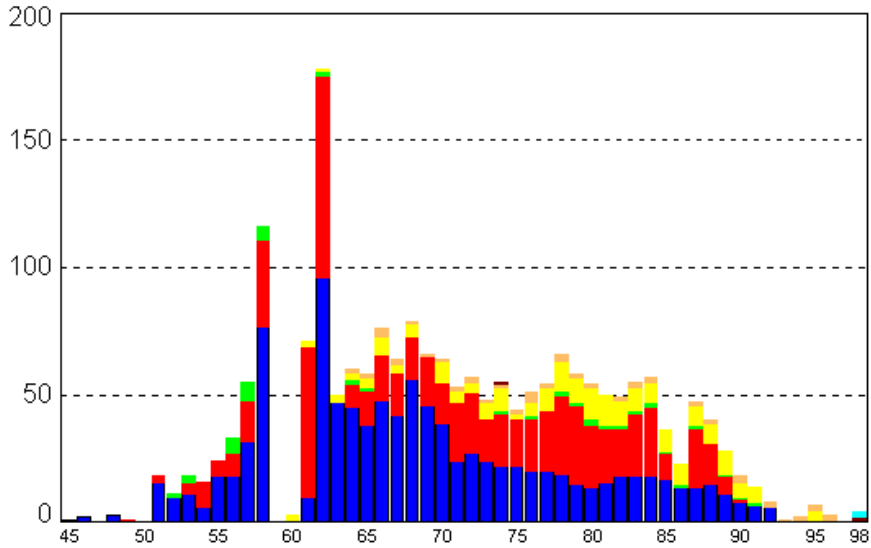
However, the United States took actions toward the end of 2001 that sought to undermine the CTBT. At the UN General Assembly meeting in November, the United States voted against a resolution submitted annually by Japan, which alluded to continuing the testing moratorium pending the CTBT's entry into force. Later that day, the US forced a vote on placing the CTBT on the General Assembly agenda. Usually a procedural decision, the United States purposefully voted against the motion it proposed to emphasise its disagreement with the treaty.[142]

As a final act to demonstrate US displeasure with the CTBT, Washington sent no representative to the November 2001 CTBT Entry into Force Conference. The meeting, which assembled 118 delegations at the United Nations to discuss promoting the CTBT's entry into force, revealed the vast international support for enacting a permanent nuclear testing moratorium. However, according to a spokesman for the US Representative to the UN, "We're just not going to engage."[143]

The Bush administration has also announced that it intends to withhold £560,000 ($800,000) in contributions to the Comprehensive Nuclear-Test-Ban Treaty Organisation (CTBTO), which is establishing the monitoring system to verify compliance with the treaty. Further complicating matters, China and Iran – both named as potential enemies in the leaked information on the NPR – have withheld seismic data from the CTBTO.[144]

In the Spirit of the Treaty?

The US position on the CTBT contrasts sharply with that of its closest allies. Britain, Canada and France have been unequivocally united on this point: "It continues to be an essential part of the structure that is needed to ensure non-proliferation and nuclear disarmament."[145] France further emphasised, "The moratorium on nuclear testing has set an important standard. It is also an essential prerequisite which must be upheld pending entry into force of the CTBT. In the longer term,



Global Nuclear Weapons Tests, 1945-1998: United States, Russia, Britain, France, China, India, Pakistan. (Source: Brookings Institution, *US Nuclear Weapons Cost Study Project)*

entry into force of the CTBT is nevertheless a crucial condition for sustaining this standard."[146]

Despite allies strong support for the treaty, the United States not only pursues nuclear weapons concepts that would require further testing, but it also may be encouraging other countries to bargain away their own testing moratoria. In a highly publicised incident in September 2001, Washington allegedly had indicated it would not object to an arsenal build-up by China. According to a *New York Times* article, the US and China "might also discuss resuming underground nuclear tests if they are needed to assure the safety and reliability of their arsenals."[147] US officials later refuted the story.

Such a move would violate the CTBT, of which the United States is a signatory. According to Article I, countries in the CTBT regime must "refrain from causing, encouraging, or in any way participating in the carrying out of any nuclear weapon test explosion or any other nuclear explosion."[148] US actions to promote the resumption of nuclear testing in another country would be a violation of the obligation to uphold the treaty. It also would cause great friction with Russia, which has ratified the treaty and thus finds itself hard-pressed to counter any US moves to create new nuclear weapons.

Potential for Testing

While upholding the self-imposed testing moratorium begun in 1992, administration officials have indicated that they may consider resuming nuclear testing to maintain the integrity and safety of the US nuclear arsenal. Citing a February 2001 report from a panel on the safety and readiness of the US arsenal, the NPR suggests reducing the readiness time for nuclear testing from the current two to three years down to a year or less. The NPR asserts that maintaining the test ban moratorium "may not be possible for the indefinite future."[149] Experts agree that new warhead designs would require testing, noting that it "seems highly unlikely that designers could certify a low-yield warhead without actually testing it."[150]

Preparations for nuclear testing resumption begin at the laboratories and the test site by improving personnel expertise and nuclear weapons facilities. During testimony before the Senate, Genral John Gordon (Ret.), head of the NNSA, elaborated on various needs for his department:

> • *… maintain sufficient R&D and production capability to be able to design, develop, and begin production on the order of five years from a decision to enter full-scale development of a new warhead;* and
> • *… maintain sufficient production capacity to be able to produce new warheads in sufficient quantities to meet defence requirements.*[151]

In the FY 2003 budget, the Bush administration has begun its plan to prepare for renewed testing to develop new nuclear weapons. The administration requested £9.8 million ($15 million) to reduce the test site readiness time in the FY 2003 budget request for the Energy Department. A similar attempt to fund test site readiness in 2001 failed in Congress.

In addition to attempts to codify the NPR's recommendations in the proposed budgets for the Defence and Energy Departments, discussions are taking place among administration officials about outright withdrawal from the CTBT. Opinions are strongly divided, since withdrawal of the US signature will no doubt prompt outcry from the public, Congress and key allies. The withdrawal from the International Criminal Court agreement in April 2002 may be a precedent for attempting such a move with the CTBT.

Washington is intent on meeting its deterrence needs by improving flexibility in its offensive and defensive capabilities. In so doing, the Bush administration is basing its nuclear policy on weapons, not treaties; turning its back on the CTBT and irreversible arms reductions; and seeking to develop new, more usable nuclear weapons. All of these developments pose grave threats to the international arms

control architecture that has taken years to put in place. However, the greatest threat for nuclear proliferation is the undermining of the NPT and CTBT.

3.4 Regional Impacts

As well as weakening global regimes, the Bush administration's nuclear proposals will have considerable bilateral and regional consequences. Improved relations with Russia could be threatened, Chinese nuclear modernisation encouraged and diplomatic progress with states of concern undermined. In addition, the impact of US plans on future nuclear tensions in South Asia should not be ignored.

Russia

> *The era in which the United States and Russia saw each other as an enemy or strategic threat has ended. We are partners and we will cooperate to advance stability, security, and economic integration, and to jointly counter global challenges and to help resolve regional conflicts.*[152]

Thus asserts the Joint Declaration on the New Strategic Relationship between the United States and Russia, signed in Moscow in May 2002. Leaders from both countries stressed that US-Russian relations are now based on co-operation and trade rather than hostility and arms. In the words of Secretary of State Powell, "I'm more worried about chickens going back and forth than missiles going back and forth."[153] In such an atmosphere of bonhomie is the development of new US nuclear weapons any real cause for concern?

Undermining Putin's Position

There is a strong belief within Russia that President Putin is selling out to the West and getting nothing in return. The list of concessions is long: allowing the emergence of US military bases in Central Asian countries; acquiescing in NATO's expansion into the Baltic states; closing a Russian base in Cuba; and the muted response to the US abrogation of the Anti-Ballistic Missile (ABM) Treaty. In return Moscow has been granted limited access to the councils of NATO and a strategic nuclear arms treaty notable for its lack of firm commitment. Behind the warm words, the strategic concessions have been largely one way.

While this is due to the weakness of Putin's hand it has nonetheless brought heavy domestic criticism, particularly from the military. In February 2002 a group of 20 retired generals and admirals launched an attack on Putin in an open letter, published on the front page of the daily newspaper *Sovietskaya Rossiya*. It criticised

the presence of US forces in Central Asia, saying "These bases are not a strike against bin Laden, but in reality against Russia's interests." Under Putin "Russia's international policy has become the policy of horse-trading the state's interests."[154] According to Vyacheslav Nikonov, political analyst and President of the Politika Fund, "Putin has assumed a position that is more pro-Western than 90 percent of the Russian electorate and the elite are prepared to tolerate."[155] Indeed, the *Russia Journal*, a business weekly published in Moscow, recently noted that the contempt of most Russian military generals for Putin's friendship with America is taken for granted in Moscow.[156]

A US move to develop new nuclear weapons would be portrayed as a failure for Putin's pro-Western policy and confirmation that the United States, while talking friendship, was still working against Russian interests. Putin has already clearly warned against the dangers of miniature nuclear weapons:

> *We hear statements and proposals for developing low-yield nuclear charges and their possible use in regional conflicts. This, to a very low bar, to a dangerous line, lowers the threshold of possible nuclear weapons use. The very approach to this problem may change, and then it will be possible to speak of a change of strategy. In this case nuclear weapons from weapons of nuclear deterrence go down to the level of weapons of operational use, and, in my opinion, this is very dangerous.*[157]

To ignore such a warning would smack of contempt for the Russian President and could well undermine the burgeoning US-Russian relationship. A hardening of attitudes on the Russian side could easily result.

Pushing the Russian Nuclear Agenda

One possible detrimental consequence of the new US nuclear weapons would be the additional influence it would to give to pro-nuclear advocates in Russia. This group's influence within the Russian military has had powerful consequences in the post-Cold War era. In an effort to make up for the qualitative and quantitative deficiencies of its conventional armed forces, Russia abandoned its no-first-use policy in 1993. Then, in 2000, the nuclear threshold seemed to be further lowered as the new Military Doctrine expounded how Moscow reserved the right to use nuclear weapons "in response to large-scale aggression utilising conventional weapons in situations critical to the national security of the Russian Federation."[158] While such doctrines are largely conceptual and have limited practical implications, the wording still suggests a worrying shift.

However, over the last couple of years President Putin appears to have steered the

Russian military away from such a path of nuclear reliance. This manifested itself in the manner in which he resolved the very public and long-running clash between chief of the general staff, General Anatoly Kvashnin and the defence minister, Igor Sergeyev, over the future of Russian nuclear forces. Kvashnin argued that funds should be shifted to ailing conventional forces while Sergeyev maintained that Russia's nuclear forces were needed to preserve a global leadership role and must therefore receive funding priority. Putin supported Kvashnin's arguments – at an August 2000 meeting of the Russian Security Council it was decided to shift funds from the Strategic Rocket Forces to conventional weapons procurement and in March 2001 Sergeyev was replaced as defence minister.

The impact of US plans on future nuclear tensions in South Asia should not be ignored.

Despite this new direction, large elements of the Russian military establishment are keen to return the emphasis to the nuclear arsenal. Indeed, there are reports that various Russian officials have, for some time now, been calling for the development of low-yield weapons to threaten underground targets.[159] These ideas have no high-level sanction and remain unfunded. Nonetheless, any development of new nuclear weapons by the United States could change this situation and increase the Russian military's interest in maintaining and developing its own nuclear arsenal. This would be disastrous to efforts to control and eventually eliminate Russian tactical weapons.

Sabotaging Tactical Treaty

Many policymakers in the United States have voiced their concern over the proliferation threat posed by Russia's tactical nuclear arsenal, estimated to number between 4,000 and 12,000 warheads. As Representative Curt Weldon, a senior member of the House Armed Services Committee, recently stated, the "real concern [is that] tactical nukes basically are subject to proliferation and internal theft, internal activities within Russia. We can't let these kind of weapons get into the wrong hands, because they are in some cases very portable, more mobile in some cases than a strategic nuke."[160]

President Bush has stressed that the non-proliferation of WMD is one of the main objectives of his administration. However, no arms agreement has been proposed and administration officials have been quiet on the issue. Under-secretary of state for arms control and international security John Bolton said the United States was "willing to discuss tactical nukes" with Russia, but does not consider them a top priority.[161] A treaty on tactical nuclear weapons represents a complex challenge,

requiring widespread elimination of such weapons and verification measures to be carried out whilst simultaneously addressing national security concerns on both sides. The difficulty of the task would only increase if the Bush administration develops new nuclear weapons. With renewed emphasis on nuclear arsenals and technologies in both Russia and the United States, the possibility of reductions in tactical nuclear warheads would disappear rapidly.

China

The development of small nuclear weapons appear to Chinese analysts and policymakers as further proof of US hostility. Bilateral relations with the Bush administration have been strained on a number of issues from the spy plane stand-off on Hainan Island to the recent establishment of US military bases in Uzbekistan and Kyrgizstan. Above all else, however, the continuance of a strong pro-Taiwan stance from the US administration is a great concern in Beijing.

President Bush led the way when he last year promised that he would do "whatever it takes" to defend Taiwan. This was followed by the administration's decision last April to offer the island democracy its biggest arms package since 1992, worth an estimated £2.6 billion ($4 billion). In March 2002, in a break with tradition, the administration allowed Taiwan's defence minister, Tang Yiau-ming, to travel to a private defence convention in Florida and meet with deputy secretary of defence Paul Wolfowitz. During the conference Wolfowitz asserted that the United States was "eager to help"[162] Taiwan with its military modernisation. US officials are now said to be urging Taiwan to overhaul their military training and command to make better use of new US hardware.[163]

The traditional US policy of "strategic ambiguity" was meant to dissuade Taiwan from declaring independence whilst also keeping Beijing guessing about how the United States would respond to a Chinese attack. That policy is under severe threat. As one administration official put it "Our ambiguity on Taiwan has become less ambiguous."[164] This changing strategic situation, combined with the recommendations of the NPR, could have a dramatic impact on Sino-American nuclear relations.

Targeting the Dragon?

A central theme in current US military thinking is the strategic and economic challenges posed by a resurgent China. Bush's early briefings from Defence Secretary Rumsfeld focused on the Pacific as the most likely theatre of future US military operations. This theme was carried on into the Quadrennial Defence Review that mulled on the increased strategic importance of Asia and, although failing to mention China by name, considered the possibility "that a military competitor with a formidable resource base will emerge in the region."[165] Likewise, in

January 2001 the US Air Force ran a war game outlining possible conflict in space. Set in 2017, the game pitted country "Blue" against country "Red" and, while officials were tight lipped over these designations, participants said that Red was China and Blue was the United States.[166]

Such strategic opposition has clearly permeated the thinking of the NPR. When discussing contingencies demanding "nuclear strike capabilities" the Review determines that "due to a combination of China's still developing strategic objectives and its ongoing modernisation of its nuclear and non-nuclear forces, China is a country that could be involved in immediate or potential contingencies." The document also highlights "a military confrontation over the status of Taiwan"[167] as a clear example of a potential nuclear flashpoint.

New Triad almost ideally designed to nullify Beijing's nuclear deterrent.

Such language is supported in the NPR by a New Triad almost ideally designed to nullify Beijing's nuclear deterrent. China currently possesses around twenty long-range Dong Feng 5 missiles capable of striking US cities. This limited force would be severely threatened by both the offensive and defensive legs of the New Triad. In any future conflict between the two nations the United States could launch a pre-emptive strike against Chinese arsenals with conventional and, if necessary, low yield nuclear weapons. Any Chinese missiles that survived this onslaught could then be intercepted by US missile defences.

The Taiwan Scenario and Freedom of Action

Such New Triad capabilities could also allow the United States to call China's bluff in a future confrontation over Taiwan. The scenario could develop as follows: Taiwan makes a declaration of independence. Beijing is enraged and begins to mobilise its military. The United States wants to help Taiwan but receives veiled threats that China is willing to launch its nuclear missiles over the issue. Previously, the US administration would likely have had to back down, unwilling to gamble its national security over the future of Taiwan. However, with the New Triad in place, China would have limited confidence in its nuclear deterrence. Washington would have increased freedom of action and Beijing would be in a weaker position to press its claims.

Development of new US nuclear weapons is seen in Washington as strengthening the US hand with China. However, it ignores the likely build up of China's nuclear arsenal.

Maintaining the Deterrent and Asymmetric Threats

A US National Intelligence Estimate, published in January 2002, concluded, "Beijing is concerned about the survivability of its strategic deterrent against the United States and has a long-running modernisation programme to develop mobile, solid propellant ICBMs."[168] The US predicts that over the next 15 years China would develop a strategic ballistic missile force of between 75 and 100 warheads, aimed primarily against the United States.

The development of new US nuclear weapons would only encourage, and perhaps expand, this effort. In the face of the New Triad, China would be able to justify expanding its nuclear arsenal without eliciting strong international reaction. This may affect stability in South Asia as first India, and subsequently Pakistan, seek to maintain the military balance. It would also encourage pro-nuclear trends in Japan, where chief cabinet secretary Yasuo Fukuda recently went as far as to say that "Depending upon the world situation, circumstances and public opinion could require Japan to possess nuclear weapons."[169]

Another consequence of the NPR's forceful proposals may be a Chinese laxity in clamping down on proliferation. Beijing may decide that the spread of WMD could be useful in complicating the nuclear planning of the United States. China has a long history of destabilising technology and material export, but during the 1990s this slowly started to change as Beijing joined the NPT, became a member of the Zangger Committee and agreed to abide by the guidelines of the Missile Technology Control Regime. A souring relationship with Washington would put this whole framework at risk. While Chinese adherence to its non-proliferation commitments has been problematic, Beijing could decide to turn its back on them.[170]

States of Concern

The Bush administration, particularly in the wake of September 11, has taken a far harder line towards states of concern than that espoused by President Clinton. Quiet diplomacy has come to be viewed by many as naïve appeasement that will merely encourage further transgressions. Instead, emphasis has been placed on "naming and shaming" rogue nations and projecting US power – political, economic and military – to force change. The clearest expression of this was President Bush's State of the Union Address on January 29, 2002. This famously outlined Iraq, Iran and North Korea as an "axis of evil, arming to threaten the peace of the world" and stressed that "in any of these cases, the price of indifference would be catastrophic."[171] Many US allies have been perplexed by such an approach due to the belief that it undermines the possibilities for compromise and negotiated settlement. Chris Patten, the EU external affairs commissioner, described President Bush's "axis of evil" comments as "unhelpful" and noted "there is more to be said for trying to engage and to draw these societies into the international community than to cut them off."[172]

Rogue Targeting

Despite such criticism, the Bush administration has expanded its confrontational approach to international relations into nuclear planning and doctrine. When discussing requirements for nuclear strike capabilities the current NPR is clear in its focus on states of concern. It lists immediate nuclear contingencies as "an Iraqi attack on Israel or its neighbours" and "a North Korean attack on South Korea." It then moves on to name its prime targets: "North Korea, Iraq, Iran, Syria and Libya are among the countries that could be involved in immediate, potential, or unexpected contingencies. All have longstanding hostility toward the United States and its security partners… all sponsor or harbour terrorists, and all have active WMD and missile programmes."[173] This focus is not completely new. Contingency plans for using nuclear weapons against non-nuclear "rogue states" have probably existed since the last NPR in 1994 and definitely since the issuing of Presidential Decision Directive 60 by President Clinton in 1997. Nonetheless, the NPR is an explicit restatement of the position and sends a clear warning to states of concern.

Feeling Cornered?

While vigilance against WMD development and proliferation is vital, it does seem that the United States is intimidating with many sticks while not holding out any carrots. Continual threats without encouragement or incentive can entrench the position of hardliners within states of concern and undermine pro-Western thinking and policy. Initial reactions to the NPR from the states targeted fumed with venom. The Iranian Government spokesman Abdollah Ramezanzadeh declared "The Islamic Republic believes that the era of using force to push forward international relations is long past, and those who resort to the logic of force follow exactly the same logic as terrorists, although they are in the position of power."[174] Meanwhile, the North Korean news agency proclaimed "the DPRK [Democratic People's Republic of Korea] will not remain a passive onlooker to the Bush administration's inclusion of the DPRK in the seven countries, targets of US nuclear attack, but take a strong countermeasure against it."[175]

The United States is intimidating with many sticks while not holding out any carrots.

While much of this is undoubtedly hyperbole, the United States risks destroying the diplomatic progress it has made in improving relations with many of these countries, in particular North Korea and Iran.

Missiles and Pyongyang

Despite the complexities of dealing with the enigmatic regime in Pyongyang, diplomatic engagement with North Korea has brought real dividends for the United States. Long-term talks concerning North Korea's missile programme have resulted in a voluntary moratorium in testing, scheduled to last at least until 2003.

Indeed, at the end of the Clinton administration the two sides appear to have come close to a deal that would have "bought-out" the Korean missile programme. Likewise the 'Agreed Framework', a programme by which the United States agreed to construct two new proliferation-resistant, light-water moderated nuclear power reactors (LWRs) in the DPRK in exchange for the shutting down of its nuclear facilities, has allowed increased insight into the DPRK's nuclear programme whilst keeping it within the NPT regime. [176]

Concerns remain and an insistence that Pyongyang accept full IAEA inspections is vital. Nonetheless, the situation has improved markedly since 1993 when North Korea was on the verge of walking out from the NPT and had flourishing nuclear and missile programmes.

The approach of the current administration threatens these areas of progress, which have been strongly supported by similar diplomatic initiatives by European allies.[177] Dialogue has all but disappeared and the incentives for Pyongyang to remain engaged with the international community seem to be shrinking. Learning that it is the primary target for possible nuclear strikes is unlikely to help matters. In such an atmosphere North Korea might decide to return to worst behaviour. Mass proliferation of its missile technology would both bring in valued hard currency and increase the asymmetric threat to the United States. Renewed nuclear development could be used to increase international leverage. The missile testing moratorium could end, and the long-range Taepo-Dong 2 could be developed. Any of these moves would set off renewed brinkmanship over the Korean peninsula and be highly damaging to the international order. Engagement with North Korea undoubtedly has its flaws, yet confrontation could have far worse consequences.

Iranian Complexities

The stance of the Bush administration towards Iran seems to be equally unhelpful. Iran's domestic power struggle – waged between the reforming government of President Muhammad Khatami and Iran's conservative clerical establishment – clearly also has an international context. Since assuming power five years ago Khatami has tried to improve Iran's relations with the rest of the world. In the aftermath of September 11 Iran has played a key role in both helping the Northern Alliance to victory in Afghanistan and stabilising the new government.[178]

This progress has been threatened by hardliners, who appear to have undertaken murky operations such as helping al-Qaeda men to safety and shipping arms to Hezbollah. Unfortunately, the Bush administration has chosen to concentrate on these events, with counterproductive results. By placing Iran in the "axis of evil" and suggesting it to be the target of potential nuclear strikes, the US is further strengthening the hand of the Islamic fundamentalists who claim that detente with the West is achieving nothing. Development of new nuclear weapons by the United States would reinforce this vicious circle and further weaken Khatami's reforming efforts.[179]

The policies of the United States towards Iran contrast strongly with the "constructive engagement" pursued by the EU and Britain, which have focused on reinstating diplomatic relations with Iran and working to encourage democratisation. The UK foreign secretary, Jack Straw, has visited Iran twice in recent years while the EU has approved a proposal for a trade and cooperation agreement with Iran.[180]

India and Pakistan

During diplomatic attempts to ease the recent tensions on the Asian subcontinent Western leaders have been constantly stressing that nuclear weapons are a class apart and should not be considered as a usable battlefield tool. Indeed Defence Secretary Rumsfeld himself noted that nuclear warheads are "not just larger weapons, they are distinctively different weapons."[181] This is an important argument to make on the subcontinent, where atomic weapons have too often been viewed as symbols of national pride rather than tools of massive destruction. However, the force of the message is undermined by the US interest in new and "usable" nuclear weapons.

High Stakes and Flawed Attitudes

The consequences of a nuclear exchange between Pakistan and India would be catastrophic. According to US intelligence estimates, a full-scale exchange would result in immediate casualties of nine to 12 million dead and two to seven million injured. This does not include subsequent deaths from long-term radiation exposure, starvation and disease. In addition, according to one US Defence Department official "The humanitarian crisis that would result would be so great that every medical facility in the Middle East and Southwest Asia would be quickly overwhelmed."[182]

Despite such terrible stakes there is still a worrying enthusiasm for nuclear weapons on the subcontinent. Viewed as a symbol of national strength, renewed Indian nuclear testing in 1998 was greeted with widespread domestic enthusiasm. India's most influential national newspapers rushed to welcome the tests and the *Times of India* claimed in an opinion poll published at the time that 91 percent of urban

Indians approved of the tests and 82 percent believed the country should now build nuclear arms.[183] Likewise in Pakistan nuclear "success" was commemorated by replicas of their nuclear missiles and testing ranges being constructed on traffic circles in big cities. It appears that the power and status of nuclear weapons is being exalted, while their potential for carnage is left largely unexamined. One consequence of this seems to be the flippant way leaders on both sides talk about calling each other's "nuclear bluff." [184]

The power and status of nuclear weapons is being exalted, while their potential for carnage is left largely unexamined.

Do as we say, not as we do…

Rather than pursuing further restrictions on nuclear weapons in South Asia, the Bush administration has relaxed US opposition to India and Pakistan's nuclear policies. In September 2001 Bush lifted sanctions imposed on India and Pakistan in the wake of the May 1998 nuclear tests and announced the rescheduling of £249 million ($379 million) of debt owed by Islamabad.

The announcement came shortly after September 11, in an attempt to shore up Pakistan's support for US operations in Afghanistan. According to Secretary of State Powell, sanctions were no longer needed because the US had "made it clear to both of these countries that we don't want to see a nuclear escalation any further in the region and … they both have been acting rather responsibly…"[185] Such optimism now seems highly misplaced.

Even if the current crisis is resolved, high-level tension between India and Pakistan will undoubtedly remain for the near future. Argument and violence over Kashmir, combined with the activities of extremists on both sides, ensures a continued military standoff. This tension could easily develop into a nuclear arms race between the two nations.

Against this background, the international community should strive to de-emphasise the role of nuclear weapons. In particular, the nuclear powers have a special duty. With the NPR and the possible development of new nuclear weapons, the United States singularly fails to carry out this responsibility. The Bush administration stresses that Indian-Pakistani tension should not escalate into a nuclear exchange, but such a message is contradicted by US proposals to develop a "usable" nuclear weapon. It would leave the nuclear powers open to the charge of "nuclear apartheid" as the United States appears to be setting its own rules. This weakens the pressure of the international community that could be brought to bear in preventing an South Asian nuclear arms race.

CHAPTER 4
Conclusions and Recommendations

In restarting new nuclear weapons development, and creating usable nuclear weapons to destroy underground bunkers, Washington would be ignoring the complex regime of arms control agreements that govern global non-proliferation efforts. In doing so, a Pandora's box would be opened, with other countries feeling that they too can ignore proliferation agreements because of their own perceived national security interests. The implications for US allies are stark: the Bush administration has chosen to advance its nuclear policy at the expense of the cooperative security agreements of a diplomacy-inclined Europe.

Such developments – currently in an early phase of research and strategising that is still reversible – are already having a destabilising impact on global security and nuclear non-proliferation efforts. If the United States continues along the current path of further research and development, a resumption of nuclear testing, deployment and possible first-use of new generations of nuclear weapons, the impact on the NPT would be fatal. Indeed, by developing new "usable" nukes and arguing that these – or even modified, existing nuclear weapons – could be used against al Qaeda's caves or Saddam's underground laboratories, nuclear weapons are being converted into a regular battlefield option.

More must be done to urge Washington to redirect its thinking about the offensive uses of nuclear weapons. Using the strength of international pressure, Congress and the Bush administration must be informed about the detrimental effects of the proposals, urged to end the programmes that may bring new nuclear weapons and usable warheads to fruition, and encouraged to engage with the international community on strengthening existing non-proliferation efforts and creating arms control initiatives that promote global security.

4.1 Immediate Steps to Prevent the Development and Testing of New Weapons

Preventing the development and testing of new nuclear weapons by the United States is the first priority to stabilise the already-fragile framework of international security. A multitude of disastrous consequences would result if Washington followed through on its aspirations: threatening the nuclear taboo with usable weapons; creating a unilateral environment in which other countries may imitate US nuclear policy, further destabilising regional security; and undermining international commitments as set out in the NPT and the CTBT.

Congress must withhold funding for research and development. Using the power of the purse, Senate and the House of Representatives can redirect the administration's efforts away from the development of new nuclear weapons. Opportunities to address these issues will continue throughout the summer of 2002 as the House and Senate reconcile their separate budget bills.

European parliamentarians should be in contact with counterparts in the US Congress. Dialogue with and pressure from European politicians and respective parliamentary committees could influence legislative efforts in Washington to prevent development and testing from moving forward. Allied intervention would stress the detrimental effect of US proposals, especially in undermining non-proliferation efforts. Increased instability worldwide will result from pursuing new usable nuclear weapons and could fuel further regional tensions, especially in South Asia.

European governments should reaffirm their opposition to nuclear testing by encouraging the United States to maintain the moratorium on testing. The Bush administration has said many times that it will not put forward the CTBT for ratification by the Senate. However, allies must continue to voice their support for the US ratification. Allies should also push for ratification by India and Pakistan. Both those countries have professed that they would eventually like to sign on to the agreement.

Britain must take the lead on restraining US plans. As the closest, most influential ally of the United States, Britain could be instrumental in promoting measures for US action that would enhance international security. Part of that role is through leadership on UK nuclear policy. The UK Parliament should ask for an explanation of Britain's negative security assurances from the Foreign and Commonwealth Office and Ministry of Defence. Recent statements from Geoff Hoon discussing the potential first-use of UK nuclear weapons challenge the commit-

ment not to use nuclear weapons against non-nuclear countries. Parliamentarians should question ministers and hold hearings as appropriate so that government officials are held accountable for their statements.

4.2 Confronting Security Threats: Negotiations, Not Nukes

The emerging US vision of a primarily military solution to the threat of WMD proliferation forms the backdrop to the drive for new nuclear weapons. Pressure is needed to move Washington policymakers away from an aggressive, unilateralist posture to supporting non-proliferation and disarmament efforts. Bolstering the existing non-proliferation framework is necessary for diplomatic measures to play a meaningful role. Most of all, allies must promote continued US engagement in international negotiations and regimes.

Strengthening the existing regime

In the global arms control architecture, clear gaps in the scope of international agreements must be closed in order to increase the efficacy of nuclear weapons control and reinforce governments' support for stabilising and enhancing the overall framework. Some obvious components are missing from existing treaties, and further negotiations will be necessary to plug these gaps.

US Congress should continue to fund arms control and disarmament agencies within the international community. These include the International Atomic Energy Agency, the Organisation for the Prohibition of Chemical Weapons, and the Comprehensive Test Ban Treaty Organisation.

European governments must strive to implement the NPT Plan of Action from the May 2000 Review Conference. Constituted of strong arms control and disarmament principles and firmly rooted in multilateral security, the Plan of Action could help alleviate some of the regional tensions, continue to make proliferation of nuclear know-how very difficult, and promote a collective willingness to move toward a diminished role for nuclear weapons in security policy. Continued US engagement in the NPT process is necessary to ensure the survival of one of the true success stories of 20th century non-proliferation and disarmament.

Nuclear weapon states must reiterate and uphold negative security assurances as previously issued within the context of the NPT. The Bush administration's announcement in June 2002 of a pre-emptive strike policy dismisses guarantees made by the nuclear powers to non-nuclear-weapon states. Restating and uphold-

ing past negative security assurances would represent a significant boost to the health and credibility of the NPT. **As a close ally to the United States, the UK government should restate its own negative security assurances with the strongest language possible.**

Washington and Moscow should agree on a treaty to reduce their stockpiles of tactical nuclear weapons. The absence of a verifiable, irreversible agreement on destroying the tactical nuclear arsenals of Moscow and Washington represents a proliferation threat. These reductions are hampered by NATO's continued reliance on tactical nuclear weapons to protect the alliance. Removing US nuclear weapons from Europe would represent a significant step in reducing the importance of nuclear weapons in security policy and paving the way for further discussion on US-Russian tactical nuclear weapon control.

European leaders should support continued US-Russian dialogues on further nuclear reductions. Legally binding agreements on nuclear weapons that include transparency, verification, and irreversibility should be promoted, and European neighbours should insist on continued discussion between Washington and Moscow on nuclear arsenal reductions.

European governments must step up Co-operative Threat Reduction support for Russia. An important part of stabilising the international regime is to reduce the availability and opportunity to acquire materials to develop WMD. Russia's insecure arsenal poses a great risk since Moscow does not have enough resources to secure nuclear materials properly. The United States has given a great deal of financial support to Russia through the Nunn-Lugar programme, but European governments have not yet made significant commitments to assist Russia in ensuring that its surplus materials are made safe from resale, theft, or improper disposal. While the G-8 agreement in June 2002 showed that European leaders recognise the proliferation risk posed by unsecured or undisposed nuclear materials in Russia, the $20 billion promised over the next 10 years will make only a small dent in a very large problem.

Addressing Challenges from States of Concern

The new and usable nuclear weapons are being proposed to counter WMD programmes that may be harboured in a variety of countries. The United States has clearly pointed to several countries that may be hosting programmes that lie outside international agreements; however, other measures could be taken to pinpoint proliferators and forestall further development of WMD programmes. If advocates of diplomatic solutions to proliferation threats are to successfully promote their views they will have to provide imaginative solutions to the pressing issues raised by the proliferation of WMD among states of concern.

States should enhance international efforts to identify and inspect facilities that are allegedly engaging in forbidden programmes. While this may mean broadening the mandates of UN and IAEA inspection teams, conducting regular searches within the limits of international law may also serve as a deterrent for creating new programmes or enhancing existing ones.

The United States and its European allies must reach out to bring isolated states into arms control regimes. Special efforts must be made with Iran, Iraq, and North Korea to turn the attitude of diplomacy from absolute condemnation to constructive dialogue. In particular, the cases of Iran and North Korea present instances where past diplomatic successes can be built upon and expanded. The democratic developments within Iran should be encouraged through constructive engagement rather than stymied via persistent condemnation from Washington. Likewise, the existing moratoria on the Pyongyang's development of nuclear weapons and missile technology should be maintained and extended.

The UK government should renew its commitment to pursue a legally binding treaty on negative security assurances, and encourage other leaders to call for such an agreement. With this step, international leaders can be assured of Britain's intent to preserve and sustain the global arms control regime. The nuclear powers must then set the example and act by the rule of law. This effort will in turn strengthen the NPT and encourage the international community to act together against proliferators.

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The Authors

Mark Bromley has been an analyst with BASIC's Nuclear Weapons Programme since August 2000. He earned his Bachelor of Arts degree from St. John's College, Cambridge.

David Grahame is a Carnegie Fellow working on weapons of mass destruction issues with BASIC. Previously, he worked at the Foreign Policy Centre in London and at the Lawyers' Alliance for World Security (LAWS) in Washington. He has a First Class Honours degree (BA) in history from Peterhouse, University of Cambridge.

Christine Kucia is an analyst working on nuclear weapons and European security issues in BASIC's Washington office. Prior to joining BASIC in 1997, she worked with the Central Asia Institute at the Johns Hopkins University. She earned her Bachelor of Arts degree from Goucher College.

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Lafone House • 11-13 Leathermarket Street • London SE1 3HN • UK
T +44-(0)20-7407-2977 • F +44-(0)20-7407-2988 • basicuk@basicint.org

1012 14th Street, NW • Suite 900 • Washington, DC 20005 • USA
T +1-202-347-8340 • F +1-202-347-4688 • basicus@basicint.org

WWW.BASICINT.ORG