

10

AGENDA FOR SECURITY: Controlling the Nuclear Threat

So it's correct to say . . . that both of you agree, if you're reelected, Mr. President, and if you are elected, Senator Kerry, the single most serious threat . . . is nuclear proliferation?

—QUESTION POSED BY JIM LEHRER TO PRESIDENT BUSH AND SENATOR KERRY DURING THE FIRST 2004 PRESIDENTIAL DEBATE

The greatest threat facing Americans is a terrorist or rogue regime armed with a nuclear weapon. No weapon combines such singularly massive destructive force with the potential to destabilize entire regions and undermine the United States' unmatched strength. Today, the United States faces undeterrable potential nuclear adversaries in the form of al Qaeda and other terrorists with a global reach just as the world is witnessing a resurgence of nuclear proliferation in East Asia and the Middle East.

The Bush administration has experienced some modest successes against nuclear threats. After years of sanctions and negotiations spanning multiple presidential administrations, Libya peaceably renounced its pursuit of weapons of mass destruction. The Bush administration and Russia concluded the Strategic Offensive Reduction Treaty (SORT), which sets modest limits on the number of strategic nuclear weapons each side can deploy. Finally, the Bush administration launched the Proliferation Security Initiative (PSI), a partnership of approximately a dozen core countries that have committed to common principles for intercepting suspected weapons shipments.

But the impact of these positive developments is eclipsed by the administration's significant failures. Despite President Bush's recognition that the spread of nuclear weapons to America's

GLOSSARY

Anti-Ballistic Missile (ABM) Treaty:

A treaty under which the United States and Russia agreed not to develop a comprehensive, technologically advanced capacity to shoot down ballistic missiles. The treaty entered into force in 1972, but the United States withdrew in December 2001 to pursue the deployment of National Missile Defense (NMD).

Ballistic missiles: A class of missiles capable of delivering nuclear warheads that can only be guided at the beginning of their flight, after which the missile free-falls to its target. They can be launched from land or via a submarine.

Bunker buster: A nuclear warhead designed to penetrate many tens of feet into the earth and then detonate, directing much of the shock into the ground in order to destroy buried enemy bunkers. The technical name for the weapon is “robust near-earth penetrator” (RNEP).

Cooperative Threat Reduction (CTR):

A series of programs, begun by the United States and Russia in 1991 and now involving many countries, that secure and/or dismantle weapons of mass destruction around the world as well as the materials and technology used to create such weapons. CTR is often also referred to as “Nunn-Lugar” (see below).

Comprehensive Test Ban Treaty

(CTBT): A treaty that bans the testing of nuclear weapons and establishes a monitoring system for verifying compliance. The United States has signed the treaty, but the Senate has not ratified it. Almost 120 countries—including France, Russia, and the United Kingdom—have ratified the treaty. By the treaty’s terms, it cannot enter into force until China and the United States have ratified it. China has indicated that it would ratify it if the United States ratified it.

Container Security Initiative (CSI):

Launched in 2002, CSI is an initiative of the United States to improve the security of intermodal shipping containers—the standardized containers used to carry freight around the world and within the United States on trucks, trains, and ships. Under CSI, the United States works with the largest ports in the world to inspect containers before they arrive in the U.S. homeland. If countries agree to host U.S. inspectors at their ports, the United States reciprocates.

Fissile Materials Cut-Off Treaty

(FMCT): Still in draft form, a treaty that aims to end the production of fissile materials for weapons. Some versions of the treaty would outlaw the production of weapons-grade materials, while other versions would only outlaw the production of weapons-grade materials expressly intended for use in a nuclear weapon. In addition, some versions have verification provisions. The version supported by the Bush administration has no verification provisions, and would only ban the production of materials expressly intended for use in a weapon.

Fuel cycle: The equipment and infrastructure needed to produce weapons-grade fissile materials.

Fuel cycle loophole: The flaw in the NPT that allows states to operate a fuel cycle even though having a fuel cycle for ostensibly peaceful uses means that a country can “go nuclear” on as little as several weeks notice.

Grand Bargain: The main agreement undertaken between non-nuclear-weapons states and the nuclear-weapons states in the Nuclear Nonproliferation Treaty, whereby the former agreed to forgo nuclear weapons development and accept International Atomic Energy Agency (IAEA) inspections over their nuclear facilities in exchange for the latter having agreed to provide civilian nuclear assistance and gradually disarm.

enemies is our greatest threat, he has failed to personally invest political capital in overcoming the bureaucratic and legal obstacles hampering progress on our efforts to secure nuclear weapons, expertise, and weapons-grade nuclear material from theft. As a result, the pace at which these materials have been secured has not changed since 9/11.¹ Iran and North Korea—members of Bush’s “Axis of Evil”—have accelerated their pursuit of nuclear weapons, while Bush’s failure to resolve divisions within his cabinet over how to deal with these threats has allowed the two regimes’ nuclear ambitions to fester unchecked. The Bush administration resisted British advice to expose A.Q. Khan’s involvement in a nuclear black market once the true scale and scope of that network became clear, which the CIA believes enabled North Korea to move forward with its potentially deadly uranium enrichment program.²

The Bush administration is also helping to create the conditions for a new nuclear arms race. Its pursuit of new nuclear weapons of marginal utility has sent the signal that nuclear weapons can

G8 Global Partnership Against the Spread of Weapons and Materials of Mass Destruction:

An agreement, originating with the G8 but now expanded to most OECD countries, to help Russia (and more recently the Ukraine) manage the weapons of mass destruction legacy left by the former Soviet Union.

Highly enriched uranium (HEU):

Uranium enriched beyond 90 percent, which is suitable for use in a nuclear weapon and some civilian applications in energy and research reactors.

International Atomic Energy Agency (IAEA):

A specialized United Nations organization responsible for promoting the peaceful and safe use of nuclear technology by facilitating international cooperation on nuclear issues. The IAEA is also responsible for monitoring states' compliance with the Nuclear Nonproliferation Treaty by carrying out inspections of nuclear facilities.

IAEA Additional Protocol: An optional agreement between the International Atomic Energy Agency (IAEA) and a state that grants the IAEA heightened authority to inspect nuclear facilities.

Mini-nuke: A low-yield, tactical nuclear weapon with several envisioned uses, such as to destroy and incinerate chemical and biological weapons stockpiles or for use on the battlefield.

National Missile Defense (NMD):

In theory, NMD is a system of radars, missiles (known as "interceptors"), and eventually lasers designed to detect enemy launches of missiles and shoot down missiles in mid-flight. The system has failed almost 40 percent of the time in the highly scripted tests that have been run to date. When even slightly more realistic testing conditions are employed, the efficacy of the system drops to almost zero. Despite these failures, the Bush administration withdrew from the Anti-Ballistic Missile Treaty in order to pursue this system.

Nuclear Nonproliferation Treaty (NPT):

The keystone treaty in the nuclear nonproliferation regime that sets out the basic obligations and terms of cooperation for states with and without nuclear weapons. The treaty is based on the Grand Bargain, and entered into force in 1970.

Nuclear Suppliers Group (NSG):

Comprised of 40 countries, the NSG formulates international guidelines for controlling the export of sensitive nuclear technology.

Nunn-Lugar:

The common shorthand for the Nunn-Lugar-Domenici Cooperative Threat Reduction Program (CTR). It is used to refer to a series of programs, begun by the United States and Russia in 1991 and now involving many countries, that secure and/or dismantle weapons of mass destruction around the world as well as the materials and technology used to create such weapons. Nunn-Lugar is often used interchangeably with CTR.

Proliferation Security Initiative (PSI):

A U.S.-led partnership introduced in 2003 in which over a dozen countries have agreed to procedures and principles for cooperating to intercept weapons shipments.

Strategic nuclear weapon: Generally refers to high-yield, longer-range nuclear weapons designed for deterrence purposes, as opposed to tactical use in an ongoing battle.

Strategic Offensive Reductions Treaty (SORT):

An agreement ratified by the United States and Russia in 2003 that limits the number of strategic nuclear weapons each side can deploy (as opposed to holding in storage) to 1,700-2,200. Both sides must achieve these modest limits by December 31, 2012. At that point, the treaty expires. The treaty does not require that any warheads be destroyed.

Tactical nuclear weapon: Definitions vary, but generally this term refers to a diverse class of nuclear weapons that are portable, low-yield, and for use in battlefield scenarios.

Weapons-grade fissile material:

Typically refers to uranium-235 and plutonium-239, enriched to 90 percent or more.

Yield: The explosive force of a nuclear weapon, usually measured in equivalents to tons of dynamite. The bomb dropped on Hiroshima was equivalent to approximately 14,000 kilotons of dynamite, or 14kt for short.

improve security at a time when our leadership should be trying to convey the opposite view. The administration's willful politicization of National Missile Defense encourages China and Russia to point more nuclear weapons at us. Finally, the legal and political framework that was built by successive generations of leaders for addressing the proliferation threat is crumbling, as the United States and its allies increasingly diverge over how best to prevent proliferation.

During his second term, George W. Bush will face unprecedented nuclear challenges. To overcome these challenges, he must make nuclear nonproliferation a chief national security priority, devoting to it all the authority of his office. An invigorated strategy for fighting the spread of nuclear weapons, technology and materials must include:

- strengthening and accelerating efforts to secure nuclear weapons, expertise, and weapons-grade nuclear materials;

- maximizing the prospects for peaceful, sustainable solutions to the North Korean and Iranian nuclear crises;
- aligning the U.S. nuclear posture with our broader nonproliferation goals, including ending research and development of new nuclear weapons; and
- repositioning the United States to exercise essential leadership in updating the nuclear nonproliferation regime to deal with 21st century threats.

We can achieve these strategic goals by committing to the following principles:

The United States must lead a global partnership. No nuclear nonproliferation initiative or treaty has ever been concluded without U.S. leadership, yet no effort to reduce the nuclear risk will work unless it is global. To address today's nuclear threats, we must forge and lead active, durable coalitions that persuade the world to respond to and eliminate the most pressing threats. We must rebuild U.S. credibility, particularly after the administration's gross miscalculations about Iraq's nuclear activities. We must also demonstrate to all nations that pursuing nuclear weapons will harm their interests while verifiably renouncing them carries real benefits.

Focus resources and effort where they will have the greatest impact. In particular, the United States should direct its resources toward exploiting bottlenecks along the path to acquiring nuclear weapons. By focusing on bottlenecks, we target nonproliferation resources directly at the key steps terrorists and rogue states need to take to develop nuclear weapons. The most important of these bottlenecks is acquiring sufficient fissile materials. If we can stop terrorists and rogue states from acquiring these materials, we can stop them from acquiring nuclear weapons capabilities. The Bush administration, however, has failed to exploit this and other bottlenecks to maximal advantage.

A comprehensive approach is essential. The Bush administration has over-emphasized military force as a deterrent to rogue states that seek to acquire nuclear weapons or willfully harbor terrorists that might use the weapons. Threats of military action are, of course, a necessary part of an effective nonproliferation strategy. But the specific circumstances that drive states to proliferate or support proliferation are diverse and threats of military force will not always address those circumstances and compel states to change course. The United States must be prepared to use all of the tools at its disposal to fight nuclear proliferation.

"Trust, but verify" states' compliance. The wisdom of Ronald Reagan's Russian-borrowed maxim has been confirmed with each new instance of a state successfully hiding its nuclear weapons program—from Iraq in the early 1990s to North Korea and Iran today. Verification measures raise the costs of pursuing nuclear weapons while increasing the odds that violators are caught—without compromising our own nuclear security, given the transparency of our government and the intense media scrutiny of our weapons programs.

CURRENT STATE OF PLAY

Understanding the Bush administration's failures during its first term is vital to creating a strategy in a second term that addresses four key problems: the spread of nuclear weapons, materials, and technology to terrorists and rogue regimes; the nuclear ambitions of North Korea and Iran; the misalignment of our nuclear posture with our nonproliferation goals; and the void created by a crumbling nonproliferation framework.

Acquisition by terrorists and rogue regimes

There are two potential avenues a terrorist or rogue regime can take to acquire a nuclear weapon. They can attempt to build a weapon, which requires access to a sufficient quantity of weapons-grade nuclear materials and, if the goal is to build a sophisticated as opposed to a crude nuclear weapon, nuclear weapons expertise. Alternatively, they can attempt to acquire a weapon that has been stolen from a state's arsenal. Once the weapon is acquired, the terrorist or rogue regime must then be able to deliver the bomb to its target.

The greatest obstacle to *building* a nuclear weapon is acquiring sufficient weapons-grade nuclear material. This can be accomplished in two ways: *procuring* it from an existing stockpile, or *manufacturing* it using complicated scientific processes requiring significant expertise. A comprehensive nonproliferation regime must prevent terrorists and states from both acquiring and producing weapons-grade nuclear materials.

PROCURING WEAPONS-GRADE NUCLEAR MATERIALS

Efforts to prevent states and terrorists from sourcing weapons-grade materials from existing stockpiles began in 1991 with the congressional passage of the Nunn-Lugar Cooperative Threat Reduction Program (frequently referred to simply as "Nunn-Lugar"). Nunn-Lugar created and funded initiatives led by the Department of Defense to improve the security of Russia's nuclear weapons complex. In the past 15 years, Nunn-Lugar programs have secured or destroyed hundreds of tons of vulnerable weapons-grade materials, in addition to improving security over Russia's nuclear weapons and providing alternative employment, training, and incentives to thousands of unemployed or underemployed former Soviet weapons scientists who have access to or expertise in these materials.³ Additional complementary programs are administered by the Departments of Energy and State.

In recent years, however, progress on securing vulnerable materials has been dismal: it bears repeating that the pace at which former Soviet fissile materials are being secured has not accelerated since 9/11.⁴ Weapons-grade fissile materials are stored in hundreds of military and civilian sites located in nearly 60 countries—enough to build many tens of thousands of nuclear weapons.⁵ Less than a quarter of it is secured according to what noted security expert and Harvard professor Graham Allison has called "the gold standard": the level of security provided to the gold at Fort Knox.⁶ Bureaucratic red tape and disputes over legal liability are among the primary obstacles hampering progress on efforts to secure vulnerable nuclear weapons-usable materials.

During his second term, George W. Bush will face nuclear challenges without precedent. To meet these challenges head-on, he must make nuclear nonproliferation his chief national security priority, and devote to it all the authority of his office.

Experts agree that a terrorist or state with a sufficient quantity of highly enriched uranium could build a crude nuclear weapon, similar in destructive force to the one dropped on Hiroshima, with no specialized nuclear weapons expertise and even without the knowledge of the state in which they are operating.

While efforts to improve the security of vulnerable materials have lagged on President Bush's watch, global stockpiles of these materials have grown. The amount of plutonium in civilian stockpiles is growing significantly.⁷ This rate of increase shows no signs of slowing: in a significant shift in U.S. policy, which had long discouraged the use of plutonium in civilian reactors because of its potential use in nuclear weapons, the Bush administration recently allowed the export of separated plutonium to France for use in a nuclear power reactor.⁸ Additionally, the Bush administration declined to take strong steps towards eliminating the future production of weapons-grade material for use in nuclear weapons by refusing to support verification measures in ongoing negotiations for a key arms control treaty, the Fissile Materials Cut-Off Treaty.

MANUFACTURING MATERIALS AND THE PROBLEM OF A.Q. KHAN AND HIS DANGEROUS NETWORK

165 The Bush administration's response to the nuclear network has been marked with miscalculations and mistakes from the beginning. The Bush administration ignored advice from the British to confront Pakistan about Khan's involvement as soon as evidence began to surface about how dangerous the network was.¹⁰

The Bush administration's reported motivations for waiting—to learn more about the network—are understandable. But given the severity of the threat this technology poses to U.S. national security, its decision to wait was ultimately a mistake. Indeed, it was during this period of waiting that Khan fulfilled an important shipment of uranium enrichment technology to North Korea.¹¹ Though there is some dispute over the details of North Korea's uranium enrichment program,¹² the CIA believes this technology could eventually help North Korea produce two new nuclear weapons per year.¹³

The Bush administration now claims that Khan's network has been put "out of business."¹⁴ While Khan's involvement has been exposed, Khan was one player in a global network that is most likely still in operation.¹⁵ Moreover, the United States has not directly questioned Khan as to what other individuals and countries have been involved in the black market. Instead, it is relying on the government of Pakistan—which a report from the nonpartisan Congressional Research Service says may have been complicit in sustaining the network—for intelligence about the black-market.¹⁶ Additionally, while other members of Khan's black-market remain at large, many nations are failing to adequately regulate the sale and export of critical nuclear equipment—either because they do not care, or because they lack the regulatory capacity to do so. This further elevates the risk that states will be able to acquire the equipment needed to make weapons-grade materials for a nuclear weapon.

BUILDING A WEAPON

After acquiring weapons-grade materials, terrorists or states still need to transform those materials into a weapon. Experts agree that a terrorist or state with a sufficient quantity of highly enriched uranium could build a crude nuclear weapon, similar in destructive force to the one dropped on Hiroshima, with no specialized nuclear weapons expertise and even without the

knowledge of the state in which they are operating.¹⁷ The weapon might not be perfect, but it would most likely work. Several basic designs are already irretrievably in the public domain. Given the relative ease with which a terrorist could deliver a nuclear weapon, as described below, a strengthened nonproliferation strategy must focus in particular on preventing nuclear materials from falling into the hands of terrorists and rogue states in the first place.

While terrorists are likely to be content with crude nuclear weapons, states typically want to integrate their nuclear weapons capacity into their broader military strategies and to be able to mount the bomb on a missile. Accordingly, states trying to develop nuclear weapons desire specialized weapons expertise that can help them develop smaller, reliable, and more specialized nuclear weapons.

Two new potential sources of this expertise have emerged in the past four years: nuclear experts from Iraq and Libya. Thousands of former weapons scientists and technicians from these countries are out of work. In the case of Iraq especially, these scientists face a very uncertain future, with their country in chaos and the economy in shambles. As Under Secretary of State John Bolton, the Bush administration's senior nonproliferation diplomat, testified before the House Committee on International Relations, these experts are "the biggest threat that we now face from Iraq's defunct WMD program."¹⁸

The State Department had programs in place to redirect these former weapons scientists to peaceful, productive pursuits. The programs were modeled on highly successful, ongoing initiatives used to redirect unemployed and underemployed weapons scientists in the former Soviet Union. But the State Department's programs for Iraq and Libya received miniscule funding during their first few months of existence, and in 2004 the Bush administration declined to request that the Congress fund these programs.¹⁹ As a result, Iraqi and Libyan weapons scientists are out of work, and vulnerable to being tempted to sell their weapons expertise to anyone willing to pay for it.

BUYING OR STEALING AN EXISTING WEAPON

A terrorist or state could bypass the hurdle of acquiring weapons-grade materials and building a crude weapon with them by attempting to procure an actual nuclear weapon on the black market. Though there have been no confirmed cases of theft of a nuclear weapon, the possibility should not be ruled out.²⁰ The most probable origin for such a weapon would be Russia. Russia naturally has every incentive to guard its nuclear weapons—after all, a stolen weapon could plausibly be used against Russia. But the fact that Rus-

No nuclear nonproliferation initiative or treaty has ever been concluded without U.S. leadership, yet no effort to reduce the nuclear risk will work unless it is global.

WEAPONS-GRADE FISSILE MATERIALS

The two elements used in nuclear weapons—uranium and plutonium—do not exist in weapons-grade form in nature. Uranium must be mined, processed, and then enriched to become highly enriched uranium (HEU) before it can be used in a bomb. A minimum of 35 pounds of HEU is needed to make a bomb. Plutonium exists in very minute forms in nature, and is also a byproduct of the reactions that take place in nuclear reactors. Plutonium for use in bombs and energy reactors is produced by using chemical processes to extract the substance from the byproducts created by the nuclear reactions that take place in certain kinds of nuclear reactors. A minimum of nine pounds is needed to build a bomb.

sia has an incentive to guard its massive weapons stockpile does not mean that Russia has the actual capacity to guard it.

Out of the entire Russian nuclear weapons arsenal, terrorists or rogue states would most likely seek to acquire a Russian tactical nuclear weapon—a portable, comparatively small, and easy-to-conceal nuclear weapon capable of being smuggled with relative ease. Experts estimate that Russia has somewhere between 3,000 and 20,000 tactical nuclear weapons, a range indicative of how little is known about Russia's stockpile.²¹ Although the United States is helping Russia to safely and securely dismantle thousands of Russia's *strategic* nuclear weapons through the Nunn-Lugar programs, Russia's *tactical* nuclear weapons remain entirely outside of these programs.

DELIVERING A NUCLEAR WEAPON: THE BUSH ADMINISTRATION'S SKEWED AGENDA

In addition to preventing terrorists and states from developing or acquiring nuclear weapons, a comprehensive strategy must also prevent terrorists and rogue states from delivering a nuclear weapon against U.S. targets. The Bush administration has focused principally on one particular delivery threat—that of a long-range ballistic missile launched at the U.S. homeland. There are two states driving this threat perception: Iran and North Korea.²² Both countries, however, are at least a decade away from successfully building a missile that is capable of carrying a nuclear warhead all the way to the United States.²³ Moreover, even in the extremely unlikely event that these countries suddenly acquired ballistic missiles capable of credibly targeting the continental United States, there is no reason to believe that our overwhelming and devastating ability to respond to any nuclear attack in kind would fail to deter them from committing national suicide by attacking us.

Nevertheless, the Bush administration requested \$7.8 billion for FY 2006 to develop and deploy a ground-based midcourse National Missile Defense (NMD) system designed to shoot down enemy ballistic missiles in flight. Simply put, the system does not work. The system has failed approximately 40 percent of the time in the highly scripted tests that have been run to date.²⁴ When even slightly more realistic testing conditions are employed, the efficacy of the

system drops to almost zero.²⁵ The system has been tested only twice in the last two years, and each of these \$85 million tests ended in failure when a critical component of the system—the rocket designed to carry the “kill vehicle” that destroys enemy missiles into space—did not launch properly.²⁶ Nevertheless, the Bush administration has plans to spend more than \$50 billion dollars over the next six years on the system.²⁷

CARRYING OUT NUCLEAR ATTACKS

A crude nuclear weapon will fit in the back of a medium-size truck, while the fissile materials needed to build a nuclear weapon occupy less space than a two-liter bottle of soda. In light of these dimensions, the most likely route for terrorists to launch a nuclear attack against the United States is to hide a nuclear weapon or its key components (specifically, the fissile materials) in a cargo container, ship it into the United States, and transport it to its final destination for assembly and/or detonation. This route offers a relatively easy and cost-effective way to deliver a weapon with high accuracy.

While the Bush administration has spent billions rushing to deploy an NMD system that does not work against a threat that does not yet exist, it has virtually ignored the route most likely to be used in a nuclear attack: terrorists smuggling the weapon or weapons-grade nu-

clear materials into the United States. Experts estimate that a shielded nuclear weapon smuggled in a container still has a 90 percent chance of making it through customs completely undetected.²⁸ Efforts to intercept weapons shipments have improved, with the May 2003 launch of the Proliferation Security Initiative (PSI), but the PSI has uneven membership and rests on a weak legal foundation that threatens to obstruct the smooth operation of the initiative.²⁹

Unchecked nuclear ambitions of Iran and North Korea

Iran and North Korea pose the greatest current challenges to limiting the spread of nuclear weapons. By threatening to preemptively invade them with its “axis of evil” rhetoric, the Bush administration hardened the determination of these countries to acquire the one weapon capable of deterring an American invasion: a nuclear bomb. Since making the threat, however, the Bush administration has done nothing credible to counteract the incentive.

On President Bush’s watch, North Korea withdrew from the Nuclear Nonproliferation Treaty, set aside enough fissile materials to quadruple the suspected size of its nuclear arsenal, and accelerated efforts to build additional capacity for manufacturing weapons-grade nuclear materials. Perhaps most disturbingly, the reclusive Stalinist regime may have transferred a key precursor to making highly enriched uranium—uranium hexafluoride—to Libya.³⁰ If North Korea has done this, then it demonstrates a willingness on its part to help rogue states overcome the greatest obstacle to acquiring nuclear weapons: the acquisition of weapons-grade fissile materials.

Meanwhile, Iran has flouted its legal obligation to subject its nuclear facilities to International Atomic Energy Agency (IAEA) safeguards designed to help prevent states from using civilian nuclear energy programs as cover for weapons programs, while accelerating its efforts to build facilities that will enable it to develop an entirely self-sufficient nuclear weapons program.

Rather than addressing these imminent nuclear threats, the Bush administration obsessed over what most experts in the national security community viewed as a far-distant threat: Iraq under Saddam Hussein. During the period from the fall of 2002 to the summer of 2003, while the Bush administration was focusing on its invasion and occupation of Iraq, North Korea expelled IAEA inspectors, removed IAEA seals from spent fuel rods, restarted the Yongbyon reactor, and withdrew from the Nuclear Nonproliferation Treaty. Iran continued to flout its IAEA obligations and to work on building a fuel cycle.

When the administration did finally turn to Iran and North Korea, it could not agree on how to act because of deep divisions within President Bush’s cabinet that he failed to resolve. Despite 31 months of drafting efforts, a presidential decision directive—the document that lays out official policy guidance on the most pressing national security issues—on Iran was never signed.³¹ This indecision left the administration hamstrung over how to respond to three secret overtures from Tehran that held the promise of addressing the full range of our concerns with that country.³²

A similar policy paralysis has hamstrung the administration’s North Korea policy. The administration took 18 months to lay out a specific response to North Korea’s announcement that it was pursuing nuclear weapons.³³ Even then, the response was so unrealistic that no participant in the so-called “six party talks” took it seriously. To this day, the administration appears to

While the Bush administration has spent billions rushing to deploy an NMD system that does not work against a threat that does not yet exist, it has virtually ignored the route most likely to be used in a nuclear attack: terrorists smuggling the weapon or its key components (such as weapons-grade materials) into the United States.

have no coherent policy for addressing either country's nuclear ambitions: President Bush has been powerless to convince North Korea to renew talks about its nuclear ambitions, and the administration continues to sit on the sidelines of Europe's efforts to work out a peaceful, sustainable outcome regarding Iran's nuclear programs.

Both Iran and North Korea present very difficult cases, to be sure. But the administration's undisciplined "Axis of Evil" rhetoric and subsequent statements, skewed priorities, and lack of a clear strategy have, at a minimum, given each country more time and additional incentives to pursue nuclear weapons. At worst, the administration has allowed the nuclear ambitions of both countries to harden beyond the point of no return.

The nuclear posture of the United States

The Bush administration has left the U.S. nuclear posture mired in stale Cold War thinking about the scale of targeting needed to robustly deter threats. Our nuclear posture must continue to pose a credible deterrent, but the United States has approximately 5,300 fully operational nuclear weapons and another 5,000 weapons in various stages of storage, repair, and refurbishment.³⁴ The only country in the world with a nuclear arsenal remotely close to this size is Russia.

Rather than take serious steps with Russia toward mutually reducing our stockpiles, the Bush administration has encouraged Russia to continue to point nearly 1,000 nuclear weapons at the United States by politicizing the deployment of NMD, pursuing research on a bunker-buster nuclear weapon that many in the Russian nuclear establishment believe is intended to enable the United States to carry out a crippling first strike against hardened Russian nuclear silos and storage facilities, and raising by several hundred the number of land-based nuclear weapons pointed at Russian targets.³⁵ In light of Russia's decaying physical command and control apparatus and the lingering questions about its political stability—which increase the chances of an accidental or unauthorized launch—these weapons pose a direct threat to U.S. national security that our nuclear forces cannot readily deter.

Similarly, the Bush administration has made no effort to work with Russia to lower the alert status of each side's deployed nuclear weapons, despite the fact that a massive preemptive decapitation strike by either side is no longer a plausible scenario. Since U.S. weapons are more reliable and accurate than Russian weapons, maintaining this alert status provides the Russians with an incentive to act rashly under conditions of stress or uncertainty.³⁶

The one step the administration has taken toward decreasing Russian proliferation is the Strategic Offensive Reductions Treaty (SORT), which President Bush and Russian President Putin touted as a major arms control agreement. It is not. SORT sets very modest limits on the number of operational warheads each side can have—a maximum of 2,200, each capable

of vaporizing a city—and does not require that excess weapons be permanently dismantled. They must achieve these cuts by 2012, at which point the treaty expires. It also has no verification mechanisms, so the United States has no way to know whether Russia is abiding by its commitments.

As an additional component of our nuclear posture, the Bush administration also sought to develop new nuclear weapons: the “bunker buster,” designed to destroy hardened bunkers, and the “mini-nuke,” a low-yield battlefield weapon. Though Congress sensibly cut funding for these programs in its FY 2005 Omnibus Spending Bill against the president’s wishes, the Bush administration has requested funding for research on the weapon in its FY 2006 budget.³⁷ The tactical advantages of these weapons, compared with conventional alternatives, are highly dubious.³⁸ The Bush administration’s pursuit of new nuclear weapons has, however, undermined our broader efforts to convince the world that, in today’s security environment, nuclear weapons are of declining value, and has made U.S. calls for strengthened nonproliferation rules sound sharply hypocritical. In addition, the weapons promote fear in Russia and China that such weapons could be used against them, giving each country an incentive to strengthen its own nuclear arsenal, creating the conditions for a new nuclear arms race and increasing the chances of a nuclear attack against the United States.

The crumbling nonproliferation framework

The heart of international nonproliferation efforts for decades has been the Nuclear Nonproliferation Treaty (NPT). The NPT, which entered into force in 1970, was designed to prevent the spread of nuclear weapons while allowing the development of peaceful nuclear technology. To this end, it instituted a “Grand Bargain” between states that tested nuclear weapons prior to January 1, 1967 (the “nuclear-weapon States”) and states that did not (the “non-nuclear weapon States”). Under the Grand Bargain, which was extended indefinitely in 1995, the five nuclear-weapon States—China, France, Russia, the United Kingdom, and the United States—agreed to not help non-nuclear weapon States build nuclear weapons, decrease their nuclear arsenals, forgo nuclear weapons testing, and support the development and spread of civilian applications of nuclear technology. In exchange, all other countries agreed to forgo nuclear weapons development and accept IAEA inspections over their nuclear facilities.

Actions and policies by the Bush administration, however, have undermined the Grand Bargain. The Bush administration fought for and won the repeal of the Spratt-Furse amendment (which had prohibited any research that could lead to new low-yield nuclear weapons), and supported research into low-yield nuclear weapons through its Advanced Concepts Initiative and a high-yield bunker-buster nuclear weapon designed to be used on a battlefield. Though the administration proposed in its FY 2006 budget not to continue the Advanced Concepts Initiative, it still supports research on the nuclear bunker-buster. It also is proposing work on a Reliable Replacement Warhead, about which little is known. Research on new, more “usable” nuclear weapons does not improve U.S. national security; it undermines it by violating the spirit of Article VI of the NPT, which calls for the gradual elimination of the nuclear arms race and the nuclear arsenals. With more and more countries conditioning their support for U.S. efforts to strengthen global nonproliferation rules on U.S. compliance with Article VI, this research threatens to obstruct achievement of our nonproliferation goals.

In 1996, President Clinton signed the Comprehensive Test Ban Treaty (CTBT), which bans nuclear testing and creates mechanisms for verifying states' compliance with the ban, but the Bush administration has refused to press for Senate ratification. The Bush administration has failed to support efforts to verifiably cease the production of weapons-grade fissile materials by supporting only a watered-down version of the Fissile Materials Cut-Off Treaty (FMCT). Finally, the Bush administration withdrew from the Anti-Ballistic Missile Treaty in order to build a National Missile Defense system that does not work for a threat that does not yet exist.

Additionally, the Bush administration failed to take strong, affirmative steps toward fixing basic weaknesses in the global nonproliferation framework. These weaknesses include: the ease with which states can use nuclear power and research facilities to secretly create weapons; the lack of clear and immediate global consequences for states that violate their nuclear nonproliferation commitments; and the lack of meaningful participation in global nonproliferation efforts by India, Pakistan, and Israel.

United States leadership is critical to correcting these weaknesses and strengthening global efforts to prevent the spread of these deadliest of weapons; no major nuclear nonproliferation treaty or initiative has ever succeeded without it. But the United States is also facing a world that is wary of its motives and scornful of how President Bush has used American power, and less willing to join with the United States in maintaining international peace and security. As long as the world disrespects our judgments about the proliferation threats we face and what to do about them, we will be powerless to inspire the world to commit to nonproliferation and the proliferation threat will grow.

PROGRESSIVE POLICY RECOMMENDATION AND ACTION PLAN

The following recommendations are designed to address immediate security vulnerabilities, while positioning the United States to exercise essential leadership in updating the international nuclear nonproliferation regime to deal with 21st century threats.

Secure weapons-grade nuclear materials, technology, and expertise

The most vulnerable weapons-grade fissile materials around the world should be secured within four years according to a uniform, global, and high standard of security. The following steps will achieve this goal:

- The president should issue a directive decreeing that fissile materials security is a top national security priority and appoint a presidential envoy on preventing nuclear terrorism. Supported by the National Security Council, the envoy should be responsible for developing a global action plan for improving fissile materials security and coordinating interagency work. The envoy would serve as the president's personal representative on missions to improve global cooperation and overcome implementation obstacles.
- The president should propose the creation of an international Contact Group on Preventing Nuclear Terrorism. The presidential envoy would represent the United States, and high-level representatives from the G8 (including the European Union), Brazil,

China, India, Israel, and Pakistan would participate. The purpose of the Contact Group would be to promote a common threat assessment, formulate a global security standard for fissile materials, and cooperate on implementing the global security standard.

- The president should make every effort to implement global nuclear security programs such as Nunn-Lugar and related programs at the Departments of State and Energy, including providing his personal involvement with Russian leaders to eliminate the bureaucratic, legal, and other obstacles that are hampering progress on existing efforts. Once these obstacles are overcome, the president should request and the Congress should provide \$10 billion over four years for achieving comprehensive security upgrades on vulnerable weapons-grade fissile materials in the republics of the former Soviet Union. To help achieve this goal, the president should initiate a bilateral summit with Russia on nuclear security and nuclear forces. The summit should be used to help overcome these obstacles and work towards renewing the Umbrella Agreement between the United States and Russia, set to expire in 2006, that authorizes many Nunn-Lugar programs.
- The president should seek sufficient programmatic flexibility to ensure steady progress on global nuclear security programs. Specifically, Congress should repeal legislative provisions that require the president to certify that Russia is meeting various disarmament obligations before spending funds. These requirements have no practical impact on Russian decision-making with respect to its disarmament obligations, but obstruct long-term strategizing over how to effectively prevent nuclear terrorism. The president should also work with Congress to develop reasonable performance measures to address congressional concerns about how funds earmarked for global nuclear security programs are spent.
- The president should fully implement Global Threat Reduction Initiative programs for securing vulnerable fissile materials at civilian installations and eliminating the use of highly enriched uranium in civilian reactors. The president should work with Congress to secure the approximately \$100 million a year for each of the next five years that he proposed in his FY 2006 budget proposal for these efforts.

The following steps should also be taken to stop the production of additional weapons-usable fissile materials:

- The president should direct the secretary of state to pursue a verifiable Fissile Materials Cut-Off Treaty (FMCT) that outlaws the production of weapons-grade nuclear materials no matter what their end purpose.
- The president should reinstate the moratorium on the export of separated plutonium.

When the administration tried to focus on Iran and North Korea, it could not agree on how to act because of deep divisions within President Bush's cabinet that he has failed to resolve.

The further spread of the technology and equipment needed to produce weapons-grade materials should be halted. This is a long-term undertaking, which the president should begin immediately by taking the following actions:

- The president should work to promote the International Atomic Energy Agency's (IAEA) Additional Protocol as the new standard for gauging states' compliance with the NPT's obligations. The president should work with the IAEA and other countries to restrict nuclear assistance to states that the IAEA cannot certify as being in compliance with the Additional Protocol.
- The president should work with the IAEA and all countries that manufacture and export sensitive nuclear equipment to develop global rules that will better prevent the spread of fuel cycle technology. In the short term, the president should support a global five-year moratorium on the production of highly enriched uranium and weapons-usable plutonium. To implement the moratorium, the president and countries that already have these facilities should commit to supply materials at fair market value, provided the recipient has signed the Additional Protocol and is in compliance with it. This measure is more politically feasible than the president's proposal to limit the export of fuel-cycle technology to states that already have it, yet still accomplishes key goals: reducing the quantities of fissile materials and fuel cycle technologies that must be tracked and secured and limiting the ability of states to use civilian nuclear programs as cover for nuclear weapons programs. During the moratorium period, the president should work to develop a global consensus over possible long-term solutions to the NPT fuel-cycle loophole.
- The president should work with the IAEA, the United Nations Security Council and other countries to adopt a Security Council resolution that establishes a presumption that withdrawal from the NPT threatens international peace and security, and that the Security Council will still hold a state that withdraws from the treaty accountable for violations committed while the state was a party. In addition, the resolution should require that any nuclear materials, facilities, equipment, technology, or related infrastructure acquired before withdrawal be verifiably dismantled, destroyed, or returned to the state that originally provided them. The Security Council should authorize enforcement actions to give teeth to these rules.
- The president should work to strengthen information-sharing and coordination regarding decisions about which items and technology to subject to export controls, as well as enforcement among participants in the Nuclear Suppliers Group and other global efforts to prevent sensitive nuclear equipment from falling into the wrong hands. The president should start by ensuring that the recommendations contained in the Government Accountability Office's report, *Strategy Needed to Strengthen Multilateral Export Control Regimes*,³⁹ are fully implemented. The United States should vigorously support—using political and financial incentives as appropriate—the implementation of United Nations Security Council Resolution 1540, which calls on all countries to adopt domestic laws to prevent proliferation, and authorizes the Security Council to seize illegal transfers of these materials pursuant to its authority under Chapter VII of the UN Charter.

- The president should condition military aid provided to Pakistan on allowing the United States and/or the IAEA direct access to A.Q. Khan for questioning. While our relationship with Pakistan is important in fighting the war on terror, Pakistan can do more to help the United States understand the true scale and scope of the global nuclear black market.

New sources of weapons expertise should be redirected toward more productive and peaceful pursuits:

- The president should continue to support ongoing initiatives designed to prevent former Soviet weapons scientists from selling their expertise to terrorists and rogue regimes.
- The president should request and Congress should provide no less than \$25 million to provide Iraq's and Libya's former weapons scientists with incentives, new training, alternative employment, and research grants to prevent them from selling their expertise to terrorists and rogue regimes. The appropriation would fund an initiative modeled on the proven programs implemented for former Russian weapons scientists.

The Bush administration's pursuit of new nuclear weapons has undermined our broader efforts to convince the world that, in today's security environment, nuclear weapons are of declining value, and has made U.S. calls for strengthened nonproliferation rules sound sharply hypocritical.

The United States should work to spread the burden of combating nuclear proliferation:

- At the July 2005 G8 Summit, the president should encourage his counterparts to approve a strategy and specific timetable for securing and spending the \$20 billion pledged by countries participating in the G8 Global Partnership Against the Spread of Weapons and Materials of Mass Destruction.⁴⁰ The G8 Global Partnership, which focuses on Russia and other countries of the former Soviet Union, remains the most ambitious global effort to secure and/or destroy vulnerable weapons-grade materials, secure and/or dismantle excess nuclear warheads, and redirect weapons scientists to peaceful pursuits. But it is approximately \$3 billion short of achieving its \$20 billion goal, and much of the money pledged so far has yet to be spent on specific programs.

Efforts to prevent the theft of nuclear weapons should be accelerated and broadened:

- The president should support ongoing global nuclear security programs to secure and, where appropriate, dismantle Russia's strategic nuclear weapons arsenal.
- The president should work with Russia to include that country's tactical nuclear weapons arsenal in Nunn-Lugar programs. At the bilateral summit on nuclear security and nuclear forces, proposed above, the president should offer to verifiably dismantle the approximately 1,600 tactical weapons in the U.S. arsenal in exchange for Russia fully accounting for and verifiably dismantling its tactical arsenal. In today's security environment, these weapons serve no practical purpose that conventional alternatives cannot

fulfill, while the continued existence of Russia's tactical arsenal raises grave concerns that al Qaeda or a similar terrorist group could procure a Russian tactical nuclear weapon. The president should closely consult NATO allies on any measures relating to U.S. nuclear weapons deployed in Europe.

Efforts to prevent nuclear weapons from entering the United States must be strengthened and tailored to existing threats:

- The president should work toward broadening participation in the Proliferation Security Initiative (PSI). Securing China's full and active participation is a key priority.
- The president should urge the Senate Majority Leader to schedule the Oceans Treaty for a floor vote in order to put the Proliferation Security Initiative on more stable legal ground. Currently, the legal principles governing U.S. participation in the PSI are based upon uncodified customary international law. The Oceans Treaty codifies these principles and clarifies them, ensuring that the United States and other countries participating in the PSI are operating under the same set of rules and procedures.
- The president should support and Congress should pass proposed legislation to use customs duties to increase port security funding to at least \$500 million per year—up from the current annual appropriation of about \$150 million.⁴¹
- The president should direct the Coast Guard to amend its port security regulations to place greater emphasis on threat and consequence analysis.
- Working with the International Maritime Organization, the United States should adapt the International Ship and Port Facility Security Code to require all cargo vessels to have a global vessel identification capability similar to commercial airliner beacons. This will enable U.S. authorities to track and verify the courses ships take as they travel to the United States.
- The president should direct the secretaries of commerce and homeland security to convene a global shipping summit to reach agreement with major importers, shippers, and terminal operators to invest in a more transparent, efficient, and secure intermodal trading system. The emphasis should be on setting standards that will promote the rapid deployment of new technologies. Within three years, all shipping containers should be equipped with on-board Global Positioning System (GPS) tracking capability, a radiation detection device, tamper-proof secure seals, and a detailed computerized cargo manifest with prior imaging attached. All U.S. ports can then be configured with "green lanes" for rapid clearance of shipping containers conveyed by certified safe shippers utilizing smart technology. All shipping containers that fail to meet revised standards will be subject to "red lanes," creating a market incentive for security investments.
- The president should direct Customs and Border Protection (CBP) to take immediate steps to improve and better coordinate existing container security programs. The president should also request an additional \$100 million for FY 2007 to: (1) accelerate Phase III of the Container Security Initiative (CSI) and allow DHS to station up to 400

agents on extended overseas tours with proper language training; (2) increase trusted shipper certification inspections under the Customs-Trade Partnership Against Terrorism (C-TPAT) program;⁴² (3) develop a next-generation ATS computer model that fuses more data from broader sources for more effective analysis of shipping risk factors and anomalies; and (4) strengthen CBP's cyber-security capabilities to ensure that it can detect computer intrusions and attempts to forge shipping documents.

- The president should support research on NMD, but cease further deployment efforts. The Congress should evaluate any future budget requests for research and development of NMD in light of the system's efficacy against then-current threats, the technical feasibility of improving the system to address threats that could emerge during the medium- to long-term, and the trade-offs associated with spending money on NMD as opposed to on other efforts to prevent nuclear attacks against the United States.

As long as the world disrespects our judgments about the proliferation threats we face and what to do about them, we will be powerless to inspire the world to commit to nonproliferation.

Combating Iran's and North Korea's nuclear ambitions

The president should work toward completely and verifiably ending Iran's efforts to build a nuclear fuel cycle:

- The president should immediately convene a National Security Council interagency working group to overcome the divisions within his cabinet over how to deal with Iran. The working group should undertake a comprehensive review of U.S. policy on Iran across the spectrum of our political, economic, security, and diplomatic relations with that country, and report its findings, with specific recommendations, to the president within six weeks. A key goal of the working group should be to identify an appropriate range of positive incentives that the United States can offer because the United States currently has little leverage over Iran in the form of negative incentives, such as economic sanctions or military threats. The working group should include representatives from the Departments of State, Defense, Energy, Treasury, and Commerce, and from the Office of the United States Trade Representative.
- The administration should communicate to Tehran its interest in opening a backchannel of communications. Recognizing the enormous complexities and historical baggage that accompany U.S. relations with Iran, the administration should communicate its openness to a "Grand Bargain" that addresses the broader range of issues and disputes between the United States and Iran. At the same time, the administration should recognize that achieving a Grand Bargain could be a long-term undertaking and may not resolve immediate concerns over Iran's nuclear ambitions.
- The president should actively encourage France, Germany, and the United Kingdom (the European Three) to use their significant leverage to encourage Iran to abandon its proliferation ambitions, and the president should offer to join the negotiations as an ac-

tive player. A referral of Iran's nuclear activities to the United Nations Security Council could be an important step towards raising the costs for Iran of pursuing a nuclear fuel cycle, but it is unlikely to have a decisive impact on Iran's nuclear calculations because China and Russia will veto any tough action against Iran. Instead, the president should encourage the European Three to tell Iran that they would consider joining the United States in levying sanctions against vital Iranian economic interests.

- The president should work with the European Three, Japan, and ideally China and Russia to agree in advance on a series of clear consequences for each negative step Iran takes relating to its nuclear program, and also specific benefits for each positive step Iran takes. The goal should be to present Iran with a clear choice: keep the fuel cycle and become a pariah state, or get rid of the fuel cycle and start down the path toward improved economic integration with leading countries. They should communicate these consequences to Iran privately, which would avoid putting Tehran in a position of appearing to give in to Western pressure.
- The president should develop contingency plans in the event negotiations fail. The United States should immediately consult with the IAEA, members of the United Nations Security Council, Gulf Cooperation Council states, and other key regional players as to how to manage a "near-nuclear" Iran, prevent it from becoming a source of nuclear weapons materials and technology, and minimize the prospects of a regional arms race.

The president must work toward completely and verifiably ending North Korea's nuclear weapons program:

- The administration should immediately engage in a process that leads to direct, bilateral discussions with North Korea, led by senior leadership of both countries. The Bush administration's refusal to deal directly with North Korea has proven utterly ineffective at addressing North Korea's nuclear ambitions. High-level bilateral talks would streamline communications, help U.S. leaders gauge North Korea's intentions more effectively, and allow the United States to convey its position more clearly.
- The United States must also continue to forge a consensus with South Korea, Japan, China, and Russia as to how best to peacefully, completely, and verifiably dismantle North Korea's entire nuclear weapons program. During the first North Korean nuclear crisis, the United States was successful in dealing directly with North Korea while maintaining close, productive consultations with others in the region, and can do so again.
- The United States should privately request that China convey to North Korea that the United States would consider any sale of nuclear weapons or weapons-grade fissile materials as an act of war. The United States should communicate this in advance to South Korea, Japan, and Russia. The reason for going through China, as opposed to telling North Korea directly at the bilateral talks, is that a direct statement carries a high risk of escalating the stand-off, reducing the prospects for a peaceful resolution.
- The administration should lay the political and operational groundwork for possible coercive action should bilateral talks fail. The United States should simultaneously strive

to develop a consensus within the United Nations Security Council, in close consultation with South Korea and Japan, as to what consequences North Korea would face for refusing to completely and verifiably disarm.

Updating the United States' nuclear posture for 21st century threats

The following steps will align the U.S. nuclear posture with our efforts to prevent the spread of nuclear weapons:

- The president should direct the secretary of defense to begin a Nuclear Posture Review (NPR). The goal of the review should be to formulate a nuclear strategy and targeting philosophy that: (1) sustains our capacity to deter strategic threats; (2) reduces the number of nuclear weapons pointed at Americans; and (3) reinforces U.S. efforts to control the spread and use of nuclear weapons. The president should request that, given existing and potential future threats, the NPR examine the feasibility of maintaining a strong, credible deterrent with a total arsenal of 1,000 strategic nuclear weapons, which would be taken off hair-trigger alert.
- The president should further direct that all research and development of new advanced nuclear weapons cease because these weapons offer no significant strategic or tactical advantages over conventional alternatives, but rather undermine our efforts to demonstrate the declining utility of nuclear weapons. The president should also work with Congress to reinstate the Spratt-Furse amendment banning research that could lead to the development of “usable” nukes such as a “mini-nuke” or low-yield bunker-buster.
- After the NPR is completed, the president should direct the chairman of the Joint Chiefs of Staff, in consultation with the secretary of defense and the national security advisor, to prepare a Single Integrated Operation Plan (SIOP) based on the NPR.⁴³ The president should further direct the chairman to develop a secure mechanism for timely briefing the chairperson and ranking member of the appropriate congressional committees on the full contents of the SIOP, which will facilitate the Congress's decisionmaking with respect to appropriations and its ability to exercise effective oversight.⁴⁴
- Following completion of the NPR, the president should initiate a bilateral summit with Russia on nuclear security and nuclear forces. In addition to bringing tactical nuclear weapons into the Nunn-Lugar programs, the summit should be used to develop a timetable for de-alerting our nuclear forces, accelerate implementation of SORT, seek an agreement to destroy excess warheads, and develop a verification mechanism for these obligations.

The President should condition military aid provided Pakistan on allowing the United States and/or the IAEA direct access to A.Q. Khan for questioning.

Restoring U.S. leadership in strengthening the nonproliferation regime

The United States should take the following steps to restore its capacity for exercising nonproliferation leadership:

- The president should work with senators to secure the ratification of the Comprehensive Test Ban Treaty (CTBT). In addition to ensuring the survivability of the NPT and the world's cooperation in fighting proliferation, the CTBT's verification system will help the United States better monitor the spread of nuclear weapons by making it easier for us to detect nuclear tests.
- The president should direct the secretary of state to pursue a verifiable Fissile Materials Cut-Off Treaty (FMCT) that outlaws the production of weapons-grade nuclear materials no matter what their end purpose. In addition to eliminating a new source of fuel for nuclear weapons, this approach would further amplify the credibility of U.S. calls for strengthened nonproliferation rules, while serving as a stepping stone for better integrating India, Israel, and Pakistan into the global nuclear nonproliferation regime.
- Immediately prior to the April 2005 Nuclear Nonproliferation Treaty Review Conference, the president should host a summit of China, France, Russia, and the United Kingdom on how they can fulfill their disarmament commitments under Article VI of the NPT. At this Conference, the states that are party to the NPT should discuss current proliferation challenges and how to address them; how to achieve a verifiable FMCT; and a preliminary consensus on the need for eliminating the fuel cycle loophole in the NPT.

ENDNOTES

¹ Matthew Bunn & Anthony Wier, *Securing the Bomb: An Agenda for Action*, at vii (May 2005). In addition to this monograph, the analysis and recommendations of this chapter were inspired in significant part by the following works: George Perkovich, et al, *Universal Compliance: A Strategy for Nuclear Security*, (2004); Graham Allison, *Nuclear Terrorism: The Ultimate Preventable Catastrophe* (2004); Lawrence Korb (with Peter Ogden), *The Road to Nuclear Security*, (December 2004); Stephen Flynn, *America the Vulnerable: How Our Government Is Failing to Protect Us from Terrorism* (2004).

² Barton Gellman & Dafna Linzer, *Unprecedented Peril Forces Tough Calls*, *Washington Post*, Oct. 26, 2004, at A1.

³ Remarks of Senator Dick Lugar, Chairman of the Senate Committee on Foreign Relations, Aug. 11, 2004, *available at* <http://lugar.senate.gov/nunnlugar.html> (last visited Dec. 17, 2004).

⁴ Matthew Bunn & Anthony Wier, *Securing the Bomb: An Agenda for Action*, Nuclear Threat Initiative and the Harvard University Project on Managing the Atom, at vii (May 2005).

⁵ David Albright & Kimberly Kramer, *Stockpiles Still Growing*, *Bulletin of the Atomic Scientists*, November/December 2004, *available at* http://www.isis-online.org/global_stocks/bulletin_albright_kramer.pdf (last viewed Dec. 17, 2004).

⁶ Graham Allison, *Nuclear Terrorism: The Ultimate Preventable Catastrophe* (2004).

⁷ David Albright & Kimberly Kramer, *Stockpiles Still Growing*, *Bulletin of the Atomic Scientists*, November/December 2004, *available at* http://www.isis-online.org/global_stocks/bulletin_albright_kramer.pdf (last viewed Dec. 17, 2004).

⁸ Mark Clayton, *Plutonium: Rising Terror Threat*, *Christian Science Monitor*, Oct. 7, 2004, *available at* www.csmonitor.com/2004/1007/p13s02-wogi.html (last visited Dec. 17, 2004).

⁹ Barton Gellman & Dafna Linzer, *Unprecedented Peril Forces Tough Calls*, *Washington Post*, Oct. 26, 2004, at A1.

¹⁰ *Ibid.*

¹¹ *Ibid.*

- ¹² Selig S. Harrison, *Did North Korea Cheat?*, Foreign Affairs (January/February 2005) available at <http://www.foreignaffairs.org/20050101faessay84109/selig-s-harrison/did-north-korea-cheat.html> (last viewed Jan. 18, 2004). But see Mitchell Reiss & Robert Galluci, *Dead to Rights*, Foreign Affairs (March/April 2005), at 142.
- ¹³ *Ibid.*
- ¹⁴ Remarks by the President on the War on Terror, Oak Ridge National Laboratory, July 12, 2004, available at <http://www.whitehouse.gov/news/releases/2004/07/20040712-5.html> (last viewed Dec. 17, 2004).
- ¹⁵ See Bill Powell & Tim McGirk, *The Man Who Sold the Bomb*, Time, Feb. 14, 2005, at 22.
- ¹⁶ Congressional Research Service, Pakistan's Nuclear Proliferation Activities and the Recommendations of the 9/11 Commission: U.S. Policy Constraints and Options, Jan. 25, 2005, available at <http://www.fas.org/spp/starwars/crs/RL32745.pdf> (last viewed Feb. 24, 2005). See also David Ruppe, *U.S. Report Questions Pakistani and Bush Claims on Khan Nuclear Proliferation Network*, Global Security Newswire, Jan. 28, 2005, available at http://www.nti.org/d_newswire/issues/2005_1_28.html#DEA105B8 (last viewed Feb. 24, 2005).
- ¹⁷ See generally John Holdren & Matthew Bunn, *Nuclear Threat Initiative, Technical Background: A Tutorial on Nuclear Weapons and Nuclear-Explosive Materials*, (2002), available at http://www.nti.org/e_research/cnwm/overview/technical.asp (last viewed Dec. 17, 2004); Richard A. Falkenrath et al, *America's Achilles Heel: Nuclear, Biological and Chemical Terrorism and Covert Attack* (2000); Carson Mark et al, *Can Terrorists Build Nuclear Weapons?*, in Paul Leventhal & Yonah Alexander, eds., Preventing Nuclear Terrorism: The Report and Papers of the International Task Force on Prevention of Nuclear Terrorism (1987), available at <http://www.nci.org/k-m/makeab.htm> (last viewed Dec. 17, 2004).
- ¹⁸ Testimony of John R. Bolton, Under Secretary for Arms Control and International Security, before the House Committee on International Relations, June 4, 2003, available at http://www.house.gov/international_relations/108/bolt0604.htm (last viewed Dec. 17, 2004).
- ¹⁹ Charles J. Hanley, *U.S. Bid to Rein in Iraq Weapons Scientists Slows to Crawl*, Associated Press, Oct. 3, 2004, available at http://www.news-star.com/stories/100304/New_50.shtml (last viewed Jan. 13, 2005).
- ²⁰ In the 1990s, former Russian National Security Advisor Alexander Lebed said that an accounting of Russia's tactical nuclear weapons arsenal that he oversaw turned up approximately 100 Russian tactical nuclear weapons that could not be unaccounted for. The Russian government disputed the charge, and Lebed himself backtracked from the allegations. See Carey Sublette, *Alexander Lebed and Suitcase Nukes*, High Energy Weapons Archive, May 18, 2002.
- ²¹ Nikolai Sokov, *Russia: Substrategic (Tactical) Nuclear Weapons Tables*, Center for Nonproliferation Studies & Nuclear Threat Initiative, February 1999, available at <http://www.nti.org/db/nisprofs/over/tactable.htm> (last viewed Dec. 17, 2004); Nikolai Sokov, *Russia: Status and Trends in Tactical Weapons Deployment*, 1998, Center for Nonproliferation Studies & Nuclear Threat Initiative, available at <http://www.nti.org/db/nisprofs/over/tacnums.htm> (last viewed Dec. 17, 2004).
- ²² Joseph Cirincione, *The Declining Ballistic Missile Threat*, Sept. 21, 2004, available at http://www.carnegiendowment.org/static/npp/updated_missile_threat_2004.pdf (last viewed Dec. 17, 2004).
- ²³ *Ibid.*
- ²⁴ Lisbeth Gronlund et al, Technical Realities: An Analysis of the 2004 Deployment of a U.S. National Missile Defense System, Union of Concerned Scientists (2004), available at http://www.ucsusa.org/global_security/missile_defense/page.cfm?pageID=1403#Top; see also Government Accountability Office, Missile Defense: Actions Are Needed to Enhance Testing and Accountability (April 2004), available at <http://www.gao.gov/new.items/d04409.pdf> (last viewed Dec. 17, 2004).
- ²⁵ *Ibid.*
- ²⁶ John Hendren, *Missile Defense System Fails*, Los Angeles Times, Dec. 16, 2004, available at <http://www.latimes.com/news/nationworld/nation/la-na-missile16dec16,0,3923258.story?coll=la-home-headlines> (last viewed Dec. 17, 2004).
- ²⁷ Union of Concerned Scientists, *Missile Defense Program Budget Summary for FY 2005*, Mar. 4, 2004, available at http://www.ucsusa.org/global_security/missile_defense/page.cfm?pageID=1385 (last viewed Dec. 17, 2004).
- ²⁸ Lawrence Wien et al, Preventing the Importation of Illicit Nuclear Materials in Shipping Containers, (2003), at 24, available at <http://faculty-gsb.stanford.edu/wein/personal/container.pdf> (last viewed Dec. 17, 2004).
- ²⁹ Andrew Prosser, The Proliferation Security Initiative in Perspective, Center for Defense Information (June 16, 2004), available at <http://www.cdi.org/pdfs/psi.pdf> (last viewed December 17, 2004).

- ³⁰ Glenn Kessler, *North Korea May Have Sent Libya Nuclear Material, U.S. Tells Allies*, Washington Post, Feb. 2, 2005, at A1, available at <http://www.washingtonpost.com/wp-dyn/articles/A55947-2005Feb2.html> (last viewed Feb. 24, 2005).
- ³¹ Barton Gellman & Dafna Linzer, *Unprecedented Peril Forces Tough Calls*, Washington Post, Oct. 26, 2004, at A1.
- ³² *Ibid.*
- ³³ *Ibid.*
- ³⁴ Robert S. Norris & Hans M. Kristensen, *Nuclear Notebook*, 61(1) Bulletin of the Atomic Scientists 73 (2005).
- ³⁵ *Pentagon Keeps Russia Targeted*, United Press International, Mar. 23, 2004, available at http://www.military.com/NewsContent/0,13319,FL_russia_032304,00.html (last viewed Jan. 13, 2005).
- ³⁶ David E. Mosher et al., *Beyond the Nuclear Shadow: A Phased Approach for Improving Nuclear Safety and U.S.-Russian Relations*, at 1-11 (2003), available at <http://www.rand.org/publications/MR/MR1666/> (last viewed Dec. 17, 2004).
- ³⁷ David Ruppe, *Bush Administration Could Seek to Bypass House Committee Chairman on Nuke Research Funding*, Global Threat Newswire, Dec. 16, 2004, available at http://www.nti.org/d_newswire/issues/2004_12_16.html#53147FF9 (last viewed Dec. 17, 2004).
- ³⁸ See Michael Levi, *Nuclear Bunker Buster Bombs*, Scientific American, August 2004, at 66. See also Lawrence Korb (with Peter Ogden), *The Road to Nuclear Security*, (December 2004), at 13, available at http://www.americanprogress.org/atf/cf/%7BE9245FE4-9A2B-43C7-A521-5D6FF2E06E03%7D/road_to_nuclear_security.pdf (last viewed Jan. 13, 2005).
- ³⁹ Government Accountability Office, *Strategy Needed to Strengthen Multilateral Export Control Regimes*, October 2002, available at <http://www.fas.org/asmp/resources/govern/gao-03-43.pdf> (last viewed Dec. 17, 2004).
- ⁴⁰ Building Global Alliances for the 21st Century, *A Nuclear Nonproliferation Strategy for the 21st Century*, (June 2004), available at www.americanprogress.org/atf/cf/%7BE9245FE4-9A2B-43C7-A521-5D6FF2E06E03%7D/NUCLEAR_NP_STRAT.PDF (last viewed Dec. 17, 2004).
- ⁴¹ This recommendation and the four that immediately follows it are taken from the *Protecting and Preserving an Open Society* chapter in this volume.
- ⁴² Written testimony of Dr. Stephen Flynn, before the Subcommittee on Coast Guard and Maritime Transportation of the House Committee on Transportation and Infrastructure, Aug. 25, 2004, available at http://www.cfr.org/pub7314/stephen_e_flynn/the_ongoing_neglect_of_maritime_transportation_security.php (last viewed Jan. 7, 2005).
- ⁴³ Lawrence Korb (with Peter Ogden), *The Road to Nuclear Security*, (December 2004), at 13, available at http://www.americanprogress.org/atf/cf/%7BE9245FE4-9A2B-43C7-A521-5D6FF2E06E03%7D/road_to_nuclear_security.pdf (last viewed Jan. 13, 2005).
- ⁴⁴ These committees should include: the Senate and House Appropriations and Armed Services Committees; the Senate and House Select Committees on Intelligence; the Senate Foreign Relations Committee; and the House International Relations Committee.