



CHAPTER FIVE: ABATING DEMAND

As Libya and approximately 180 other countries demonstrate, the key to nuclear nonproliferation is for states to conclude that they are better off without nuclear weapons. The most effective way to stem demand for such weapons is to ensure that states do not face threats that they feel require nuclear weapons to deter or defeat, to reduce the political attractiveness of nuclear weapons, and to increase the costs and dangers associated with seeking these weapons.

It is more difficult to create these demand-abating conditions in states that already have started nuclear weapon programs. In these cases, it is not enough simply to reverse the original causes of nuclear ambition. The effort to acquire nuclear weapon capability changes the bureaucratic and political conditions within states so that reversing nuclear programs is more complicated than simply rewinding the causal chain that got them started in the first place. Nazi Germany stimulated U.S. development of nuclear weapons in 1942, but the United States did not give up its nuclear weapon program once Germany was defeated. Whatever Iran's motivations were for starting to acquire nuclear capability, the factors that must be addressed today to persuade Iranian leaders to abandon uranium enrichment and plutonium separation are more numerous and complicated because the issue has become highly politicized.

Lock in Successes

A significant number of countries have eschewed or abandoned nuclear weapon programs, including Argentina, Australia, Brazil, Egypt, Germany, Japan, Kazakhstan, South Africa, South Korea, Sweden, Taiwan, Turkey, and Ukraine. These states have the financial and technical wherewithal to produce nuclear weapons and could construct rationales for doing so. Preventing these states from undertaking nuclear programs is pivotal to the success of nonproliferation. If they chose not to comply fully with nonproliferation norms and rules, and not to cooperate in strengthening enforcement of these rules in tough cases, these states could create a global security crisis. More pertinently, these states must advocate, or at least not resist, new rules to stop the spread of nuclear weapon production capabilities and strengthen the nuclear safeguards and inspections mandate of the IAEA. Their support is needed to give the UN Security Council greater resolve to prevent or reverse proliferation challenges. The states that could have been possessors of nuclear weapons bring special credibility to the political process of strengthening the global nonproliferation regime.

The United States and other nuclear weapon states must do more to earn the ongoing support of a strong nonproliferation system among the most technically capable states that have abjured the possession or pursuit of nuclear arms.

Washington's first maxim should be Hippocratic: "Do no harm" to states that could readily produce nuclear weapons but have chosen not to. U.S. policy and rhetoric should never be dictatorial or arrogant in ways that would make officials in countries such as Japan, South Korea, or Turkey—to pick random examples—conclude that Washington would be more respectful of their interests if they had their own nuclear weapons. On the

contrary, the United States should reassure these countries and others, such as Argentina, Brazil, and South Africa, that do not have alliance security guarantees, that the United States recognizes a special duty to prevent threats that could make them reasonably feel the need for nuclear weapons. In Southwest and Northeast Asia, where Iranian and North Korean proliferation could tempt Egypt, Saudi Arabia, Turkey, Japan, and South Korea to reconsider their nuclear status, the United States should engage in preventive high-level diplomacy and defense cooperation to reassure these states that their strategic interests can be met without nuclear weapons.

The United States (and other nuclear weapon states) should focus more on rewarding states that actively strengthen the nonproliferation regime. Decisions on how to expand the permanent membership of the UN Security Council should take into special consideration candidates' contributions to nonproliferation. Decisions on where to conduct state visits and which countries should host major international conclaves should reward states that contribute heavily to the global security imperative of stopping nuclear proliferation.

It is also important to deglamorize nuclear technology as a symbol of modernity, even while encouraging the design of new generations of safer, proliferation-resistant nuclear reactors. For the latter purpose, international nuclear research and development projects should be made available only to states whose nuclear establishments demonstrate an unwavering commitment to nonproliferation. More broadly, international programs to develop cutting-edge, environmentally friendly energy technologies such as hydrogen fuel cells should be expanded. This promotion of non-nuclear energy sources does not reflect judgment on

the benefits and costs of nuclear power, economic or otherwise, but rather the political reality that nuclear establishments become mythologized in many societies to the point that curtailing any of their activities becomes seen as a rejection of modernity and progress, regardless of the economic, technical, or security merits of the activity being curtailed.

Finally, the United States and other nuclear weapon states must devalue the security and political status associated with nuclear weapons so that political actors in other highly capable societies do not conclude that they will gain international leverage or status by seeking these weapons. The role of nuclear weapons in national security doctrine should be clearly reduced, not increased. Development of new nuclear weapons should be rejected, not embraced. The correlation between nuclear weapon possession and veto power in the UN Security Council should be broken. Sales of new nuclear reactors should not be extended to states that do not live up to the same nonproliferation standards as the non-nuclear weapons states.

As former U.S. State Department official Robert Einhorn and former Defense Department official Kurt Campbell have observed, the wisdom of societies and states that have gone without nuclear weapons is reinforced by “a world in which the goals of the NPT are being fulfilled—where existing nuclear arsenals are being reduced, parties are not pursuing clandestine nuclear programs, nuclear testing has been stopped, the taboo against the use of nuclear weapons is being strengthened, and in general, the salience of nuclear weapons in international affairs is diminishing.”⁷⁹

SUMMARY OF POLICY RECOMMENDATIONS

- ▶ Reward states that contribute to nonproliferation with economic, political, and other inducements. (p. 129)
- ▶ Facilitate development and funding of substitute energy technologies and proliferation-resistant nuclear reactors. (p. 129)
- ▶ Devalue the security and political status associated with nuclear weapons by, among other things, breaking the correlation between nuclear weapon possession and veto power in the UN Security Council. (p. 130)

Conflict Resolution

Current acute proliferation threats in regions plagued with trouble—particularly the Middle East, South Asia, and Northeast Asia—will not be fundamentally redressed without progress in resolving underlying conflicts, which may in turn require internal political changes. To the extent that international leadership can promote necessary changes, the effort must come from the highest level as a priority of overall foreign policy. Nonproliferation policy makers, technical experts, or specialized institutions such as the IAEA should not be expected to lead such high-level exertions, though they can help.

Thus, the acquisition of nuclear weapons by India and Pakistan should not be seen as a failure of an autonomous nonproliferation regime. It was a result of high-level state decision making in these countries, and equally high-level decisions by the United States, China, and other international actors not to alter the incentives that were considered by Indian and Pakistani leaders. Similarly,

proliferation pressures in the Middle East will not be removed by diplomats at the NPT Review Conference; they will be removed when regional and global leaders at the highest level apply themselves to specifying and creating the conditions necessary for a zone free of nuclear, biological, and chemical weapons.

Regional conflict resolution presumably also will contribute to a reduction in possible terrorist demands for nuclear weapons, insofar as such interest can be redressed by any appeal to reason. The Israeli-Palestinian conflict is a case in point.

This analysis is obvious enough, yet officials in some states, including the United States, often speak and act as if countries such as Iran and North Korea will abandon efforts to acquire nuclear weapon capabilities without improvements in their broader security relationships. Similarly, officials in some non-nuclear weapon states demand that states permitted to possess nuclear weapons disarm, without recognizing the valid political and security problems that must be resolved in order to make disarmament augment global security.

SUMMARY OF POLICY RECOMMENDATIONS

- ▶ Raise global political demands that states that possess nuclear weapons must exert greater leadership to moderate and resolve regional conflicts that drive proliferation and possible use of nuclear weapons. (Specific obligations of the United States, Israel, India, Pakistan, and other states with nuclear weapons are discussed throughout this report, particularly in chapter 2, under obligation 6, and in chapter 6.) (p. 132)

U.S. Nuclear Policy and Arms Reduction

The twin goals of U.S. nuclear policy should be to prevent new actors from acquiring nuclear weapons and to reduce toward zero the risk that those who have these weapons will use them. This nonproliferation imperative reflects a major change from the Cold War.

During the Cold War, the most serious threat to the United States was a large-scale conflict with the Soviet Union that would trigger escalation to massive exchanges of nuclear weapons. Today, proliferation and asymmetric warfare threaten U.S. security more than the prospect of nuclear force exchanges. In these circumstances, the United States has a great incentive to ensure that all future conflicts and adversaries remain non-nuclear. Thus, nonproliferation objectives should henceforth drive nuclear policy.

This imperative does not remove other nuclear requirements, however. The U.S. nuclear deterrent backs up U.S. security guarantees to protect important allies such as Japan, South Korea, and Germany. Relying on U.S. security guarantees lessens these countries' interest in acquiring nuclear weapons themselves. The threat of U.S. nuclear retaliation also helps deter adversaries from challenging U.S. interests.

Thus, the United States must maintain an effective, reliable nuclear deterrent for as long as nuclear threats remain in the world, even as it pursues a vigorous nonproliferation strategy.⁸⁰ The question for U.S. policy makers is how best to pursue these two critical goals that are in some eyes in tension. Two radically different approaches have been advanced: to acquire new nuclear weapons with more usable characteristics, thus to dissuade proliferators; and to de-emphasize and devalue nuclear weapons, thus to strengthen the norm against their acquisition and use.

NUCLEAR WEAPONS SERVING NONPROLIFERATION

Today, elements within the U.S. policy-making and defense science establishments urge development of new types of nuclear weapons *in the service of nonproliferation*. In March 2004, the Departments of State, Defense, and Energy urged Congress to fund research and development of a new “low-yield” nuclear weapon. A Defense Science Board report, also of March 2004, argued that if the United States builds and deploys such weapons, states and terror groups would be dissuaded from seeking and using nuclear, biological, or chemical weapons to challenge the United States.⁸¹ They would calculate that if they did so, the United States would have an increased ability to respond with nuclear weapons because low-yield nuclear weapons would reduce the likely damage to civilian populations, thereby reducing inhibitions on using nuclear weapons. By appearing more usable, new nuclear weapons would enhance deterrence and thereby advance nonproliferation goals.

Those arguing this case have emphasized that the new nuclear weapons would only be used in extremis, and would not be made a major element of U.S. military doctrine or force posture. Quite the contrary—they have argued that U.S. conventional capabilities would continue to be strengthened. They have stressed that the U.S. Strategic Command has been converting its weapon systems for new long-range conventional missions, or non-nuclear strike missions.

Proponents have also asserted that the new nuclear weapons would be so uniquely dedicated to their missions—for example, to targeting deeply buried bunkers that might hold chemical or biological weapons—that other countries would recognize and accept this fact. Other countries would not conclude that

the United States was placing new value on nuclear weapons to enhance its capacity to project force around the world. So, proponents conclude, U.S. nonproliferation leadership would not be compromised, and others would continue to follow the United States in pursuing nonproliferation goals.

All these arguments are questionable, particularly whether it is true that U.S. nuclear weapons policy has little effect on other countries. Unavoidably, U.S. actions do influence others' choices about whether to seek nuclear weapons, strengthen existing arsenals, or support nonproliferation.

Those who argue that modernization of U.S. nuclear forces does not affect other countries are ignoring the core of deterrence: For a nuclear deterrent to be effective, other countries must see and understand its effectiveness. One cannot, however, have it both ways: arguing for the necessity of a strong nuclear deterrent, and at the same time denying the impact that U.S. nuclear choices have on the security decisions of other countries. If the United States places more reliance on its nuclear deterrent, other countries will notice. If they did not, there would be no such thing as deterrence.

Other states may react by acceding to U.S. power, or they may choose asymmetrical means to deter the United States. These decisions will not be driven entirely by U.S. actions; regional dynamics and threats also have an effect. But the United States cannot pretend that other countries will interpret its actions in the same benign light in which it perceives them.⁸²

Of course, in some circumstances, U.S. *conventional* power serves as the primary impetus to nuclear policy in other countries. Russia, for example, has claimed in recent years that U.S. conventional superiority creates a threat to its weakened military capacity—a threat that can only be overcome through

continued dependence on nuclear weapons. Russian strategists place emphasis on the notion that Russia's nuclear weapons undermine U.S. conventional superiority in potential theaters of war surrounding the Russian Federation.⁸³ General K. Sundarji, former Indian Army chief of staff, commented in a similar vein when he stated the lesson he had learned from the 1991 Gulf War: "Make sure you have your own atomic bomb—before you challenge the United States."⁸⁴

Moreover, if the United States pursues new types of nuclear weapons, then others—Russia, China, India, and Pakistan, for example—are likely to do the same, to the extent they can. At the very least, they will be less supportive of nonproliferation and more resistant to U.S. calls for them to forgo building up their own nuclear forces. Non-nuclear weapon states will conclude that the nuclear weapon states are breaking their commitment, under Article VI of the NPT, to pursue the total elimination of nuclear arsenals.

Both the Nuclear Posture Review and the National Security Strategy imply that a U.S. president should be less constrained by the taboo on using nuclear weapons for tactical missions.⁸⁵ These policy documents suggest that nuclear weapons might be used preemptively to attack possible chemical and biological weapons facilities or other high-value targets. However, recent experience demonstrates that the United States generally lacks sufficiently precise intelligence to make tactical use of nuclear weapons either a wise or likely option.⁸⁶ Examples include faulty intelligence in both Iraq wars and the mistaken bombings of the Chinese embassy in Belgrade and the misidentified "chemical weapons" plant in Sudan.

Essentially, if enough intelligence is available to reliably locate chemical or biological weapons bunkers, then other means, such as conventional weapons or special forces, can be used to attack them. If accurate intelligence is not available, then a nuclear attack would risk creating damage and loss of life highly disproportionate to the actual threat. No president is likely to do this. The United States would face immense international consequences if it used nuclear weapons other than in response to a nuclear attack on the United States or its forces or allies.⁸⁷

Several teams of independent physicists and former leading nuclear weapon designers have also demonstrated that the laws of physics make it impossible for *small* (low-yield) nuclear weapons to destroy chemical or biological weapons deep underground.⁸⁸ To destroy such targets, the weapons would have to be as big as some of the weapons in the current arsenal and would produce much more radioactive fallout than proponents claim. In other words, if nuclear weapons are the only way to get at these targets, then the United States already has the weapons that would be necessary. It is a dangerous illusion to believe that there is a clean and tidy nuclear way to accomplish this mission.

NONUSE AND NONPROLIFERATION

The second approach being advanced to achieve nonproliferation goals is to strengthen *the norm against the use* of nuclear weapons. Secretary of Defense Donald Rumsfeld described the issue well in the run-up to the war in Iraq:

Do we—does the department—have an obligation and have they in successive administrations of both political parties had procedures whereby we would conceivably use nuclear weapons? Yes...[But]

it seems to me that if one looks at our record, we went through the Korean War, we went through the Vietnam War, we've gone through the war on terror and we've not used nuclear weapons. That ought to say something about the threshold with respect to nuclear weapons.⁸⁹

To advance the norm against use, U.S. nuclear weapons policy has begun to move away from the Single Integrated Operational Plan, or SIOP, which was designed primarily for large-scale retaliatory attacks against Russian targets. Under the current Nuclear Posture Review, although Russia deploys more than 5,000 strategic nuclear weapons against the United States, Russia is not understood to be an “immediate contingency” against which nuclear forces are deployed. Although targeting will have to continue to take into account the need to respond in the unlikely case of a Russian attack, this is a major change from the Cold War years.

Likewise, as already noted in the present chapter under “Nuclear Weapons Serving Nonproliferation,” the U.S. Strategic Command has been tasked to develop more non-nuclear strike missions. U.S. long-range bombers are being equipped and trained for such missions, and four Trident submarines are being converted to carry non-nuclear cruise missiles. These steps are being undertaken to create a “new triad,” one devoted not wholly—as in the past—to nuclear weapons, but instead emphasizing equally non-nuclear missions and highly capable command and control.⁹⁰

U.S. policy makers thus have been taking steps to prevent the future use of nuclear weapons. This trend could be strengthened with new attention to several long-standing issues in nuclear policy. For example, U.S. and Russian strategic nuclear arsenals

are still configured on hair-trigger alert, to be launched within minutes of warning of an attack. This is unnecessarily risky when the accidental or unauthorized launch of nuclear weapons is more likely than a massed nuclear attack between the two nuclear powers. As former U.S. senator Sam Nunn has said, “Incredibly, eleven years after the so-called end of the Cold War, the decision time of our leaders has not changed appreciably from what it was during the peak of the tensions.”⁹¹

The United States should work with Russia to *lengthen the fuse on both countries’ nuclear weapons*. U.S. and Russian diplomats and military experts should more energetically implement focused and transparent measures to pull the two countries back from their Cold War hair-trigger deployments. Detailed proposals have been advanced in several forums, including studies by the RAND Corporation and the Institute of the USA and Canada in Moscow, both of which have made practical recommendations on how to achieve this important goal.⁹²

Forward deployment of nuclear weapons is a policy that should also be reformed. U.S. nuclear weapons already have been withdrawn from South Korea, and a few hundred remain in NATO Europe. They are little regarded in NATO planning, and seem largely a vestigial capability, given that NATO has extended to Russia’s borders. Although the relationship with Moscow has not been easy, Russia is emerging in fits and starts into the role of a NATO partner. In this context, U.S. nuclear weapons in Europe pose a greater risk of terrorist theft or diversion than any support they provide to NATO’s security.

The United States is largely restructuring its presence in NATO Europe, shifting forces from large fixed bases and into a new system of so-called lily pad basing. However, many of the

new, smaller bases will not be well structured for storage and maintenance of nuclear weapons. Currently deployed weapons could be moved back to the United States, with the proviso that should they ever be needed for a NATO operation, they could be returned promptly to Europe. To keep this option viable, some nuclear weapon training and basing infrastructure would have to remain in current NATO Europe facilities.

NATO's new members, many of whom are concerned about Russian nuclear weapons, will want NATO to remain committed to a nuclear option. For that reason, the United States should pursue reciprocal constraints on Russian nonstrategic nuclear weapons (see discussion below). Even original NATO members such as France and the United Kingdom, which are nuclear weapon states themselves, and Germany, which is not, would find reassurance in such constraints, as well as in maintaining nuclear training and infrastructure.

While the United States continues to de-emphasize forward deployment of nuclear weapons, it should also restore the consistency of its security guarantees and assurances. Historically, the United States' willingness to put its own security on the line in defense of its NATO and Asian allies in the face of a nuclear threat has been key to preventing allied countries in these regions from developing their own nuclear weapons. As the United States withdraws nuclear weapons from forward deployment, it will have to state a clear and solid commitment to continued defense of its allies. The United States should emphasize that the credibility of its defense commitments is greater than ever thanks to the potency of U.S. conventional weapons.

Of course, there is a certain tension between the notion that the United States is willing to defend its allies with nuclear weapons

and its emphasis on stopping other countries from acquiring nuclear weapons. This tension ultimately would be resolved by the total elimination of nuclear weapons, as agreed in the NPT. But as long as conditions are not ripe for total elimination, nonproliferation objectives are served by a U.S. nuclear umbrella over America's allies.

The United States also will have to maintain a serious and consistent attitude toward the positive and negative security assurances that it has offered in conjunction with its NPT commitments. In essence, these assurances have conveyed that the United States will not attack with nuclear weapons a non-nuclear country, unless that country is allied with a nuclear country and engaged in warfare against the United States. Although such assurances do not imply collective defense arrangements such as those guaranteed under the NATO Treaty, they have nevertheless helped persuade countries to agree to establish nuclear weapon-free zones in several key regions, including Latin America, Africa, and Central Asia.

Statements by U.S. officials in recent years implying that these assurances are little more than pieces of paper have raised widespread doubts about their value. In order to counteract this effect, the United States should consider restating the positive and negative security assurances first officially extended by Secretary of State Cyrus Vance in 1978. Secretary Vance stated that the United States would

not use nuclear weapons against any non-nuclear weapon state party to the NPT or any comparable internationally binding commitment not to acquire nuclear explosive devices, except in the case of an attack on the United States, its territories or armed forces, or its allies, by any state allied to a nuclear weapon

state or associated with a nuclear weapon state in carrying out or sustaining the attack.⁹³

Restoring confidence in the U.S. commitment to such assurances will be vital to enabling the denuclearization of NATO Europe. It would also be a key to negotiating other nuclear weapon-free zones. For example, it would be a basic condition for such a zone in the Middle East.

In regard to chemical and biological weapons contingencies, U.S. nuclear weapons policy has long been ambiguous: If chemical or biological weapons are used against the United States or U.S. targets overseas, then the adversaries launching the attack should expect a proportionate response. They will have to assume that it could be nuclear. U.S. declaratory doctrine need not advertise this hard reality, but it should continue to emphasize that U.S. nuclear weapons are available to retaliate for the use of nuclear weapons against the United States, its armed forces, or its allies.

Current U.S. policy trends, however, have left the impression that the United States would be willing to use nuclear weapons preemptively, to destroy chemical or biological weapon stockpiles, whether or not the adversary possessed nuclear weapons. This suggestion emanates in part from the recent proposals to develop new nuclear weapons to strike deeply buried chemical and biological facilities.

Explicitly extending the role of nuclear weapons in this way is counterproductive and unnecessary. It could raise significantly the frequency and salience of nuclear weapon threats in ways that could undermine U.S. interests. Chemical and biological weapons, after all, are often considered to be the “poor man’s nuclear bomb.” If these weapons become increasingly available,

the United States could find itself confronted with an increasing need to resort to nuclear threat.

However, frequent threats create a commitment trap:⁹⁴ If you don't back them up, people will no longer take you seriously. Given the gravity of breaking the nuclear taboo, the United States should not put itself in a position where it would feel an increasing need to take nuclear action.

Of course, the United States must not allow adversaries to deter it from taking action when real chemical or biological weapon threats are present. Defense Department counterproliferation programs help prevent this from happening by preparing U.S. forces with vaccinations, equipment, and tactics that will enable them to fight and prevail in environments where chemical and biological weapons may be unleashed. Conventional weapons are also being improved to destroy chemical and biological storage facilities, and U.S. forces are being trained to use these weapons to take and hold such sites.

Certain elements of U.S. policy have already strengthened the norm against nuclear use. The recent move to adjust targeting away from Russia is one example; another is the new emphasis on conventional missions for the Strategic Command. Further progress in relaxing the hair-trigger alert posture and ending the forward basing of nuclear weapons would augment the devaluation of nuclear weapons worldwide. Finally, although some ambiguity will remain with regard to the nuclear response against chemical and biological attacks, U.S. policy should emphasize Secretary Rumsfeld's message that the nuclear threshold is high and likely to remain so.

U.S. nuclear weapon policy should continue to focus on strengthening the norm against nuclear use, de-emphasizing

nuclear weapons and building up conventional capabilities. If the United States develops new nuclear weapons, it cannot avoid investing all nuclear weapons with added value in the eyes both of states that have wanted to acquire them and of those that have wanted to remain non-nuclear. On balance, the policy and technical problems associated with new nuclear weapons immensely outweigh any benefit to the United States.

THE ROLE OF NUCLEAR REDUCTION AGREEMENTS

The United States should also continue to reduce the number of its nuclear weapons while it maintains an effective, reliable nuclear deterrent. Through negotiated agreements, the United States and the Soviet Union have dramatically reduced their stockpiles of strategic nuclear weapons from the mountainous highs of the 1980s.

In 1984, before the START I negotiations began, each deployed more than 10,000 strategic nuclear weapons (see table 5.1). Then unfolded a process of legally bound nuclear arms reductions. If the 2002 Treaty of Moscow is fully implemented, then the United States and Russia will each limit strategic nuclear weapons in operational deployment to between 1,700 and 2,200.

This process of nuclear reductions has been important and demanding. However, it has focused on eliminating missiles and bombers—delivery systems—rather than warheads and the nuclear materials that go into them. START I did not address what to do with the warheads after they left deployment. Russia and the United States have each made unilateral commitments to eliminate warheads, but because of the sensitive nature of warhead design, cooperative monitoring of storage or elimination of warheads has been hampered. The lack of attention to warheads in the bilateral

**Table 5.1. Strategic Nuclear Warheads:
United States, Russian Federation/Former Soviet Union**

YEAR	RUSSIAN FEDERATION/ FORMER SOVIET UNION				UNITED STATES			
	ICBM	SLBM	BOMBERS	TOTAL	ICBM	SLBM	BOMBERS	TOTAL
1964	201	74	548	821	952	605	6,471	8,028
1974	1,666	722	596	2,985	2,041	6,569	6,788	15,398
1984	7,135	2,140	756	10,031	2,231	5,611	6,118	13,960
1994	4,530	2,436	1,468	8,434	2,215	3,021	3,565	8,801
2004	2,478	1,072	872	4,422	1,150	2,016	1,050	4,216

Notes: ICBM, intercontinental ballistic missiles. SLBM, submarine-launched ballistic missiles.

Sources: Robert S. Norris and Hans M. Kristensen, "Russian Nuclear Forces, 2004," *Bulletin of the Atomic Scientists*, 60, no. 4 (July/August 2004): pp. 72–74, available at www.thebulletin.org/article_nn.php?art_ofn=ja04norris (accessed January 6, 2005); Norris and Kristensen, "U.S. Nuclear Forces, 2005," *Bulletin of the Atomic Scientists*, 61, no. 1 (January/February 2005): pp. 73–75, available at www.thebulletin.org/article_nn.php?art_ofn=jf05norris (accessed January 6, 2005).

reduction process is one reason why many countries discount U.S.-Russian nuclear disarmament.

The 2002 Treaty of Moscow exacerbates this skepticism, because unlike the earlier START treaties, it contains no agreed-upon schedule for eliminating the launchers from which those warheads are removed. Although it calls for removing warheads from operational deployment, like START I, it says nothing about warhead elimination. Thus, there is a dual problem with the Moscow Treaty: it is silent on warhead elimination, and appears to backtrack on launcher elimination.

The Bush administration has made it clear that warhead elimination will occur, but as a consequence of unilateral U.S. policy, not a reduction agreed with Moscow. In May 2004, the president

approved a stockpile plan, whose details have not been made public, that will reportedly cut the U.S. nuclear stockpile almost in half by 2012.⁹⁵ In this way, the administration will maintain maximum flexibility in the process, but it is unclear how the United States will encourage or impel Russia to undertake similar warhead reductions.

Moreover, the current U.S. nuclear posture review, made public in 2002, states that, depending on events, *increased* deployments of strategic nuclear weapons are just as likely as a continued downward trajectory.⁹⁶ Coupled with the lack of agreed-upon measures for eliminating missiles and bombers, this has led many, including influential Russians, to calculate that the United States might reverse course on the reductions in the Treaty of Moscow.

Concerns have also emerged that Russia is not fulfilling its commitments under the so-called Presidential Nuclear Initiatives (PNIs) to reduce its holdings of nonstrategic or tactical weapons. In these statements, made in 1991 and 1992, the United States and Russia independently but simultaneously indicated that they would remove nonstrategic weapons from operational deployments and eliminate them over time. Although the PNIs were not treaty commitments, they were to include measures, such as data exchanges, to enhance confidence in their implementation. Russia has not provided this information in full, and the United States and its European allies are increasingly concerned that Moscow has not fulfilled its PNI commitments.

Thus, despite considerable efforts over the past thirty-five years to reduce their operational holdings of nuclear weapons, the United States and Russia receive little credit in the international community for being serious about their NPT Article VI obligation. Certainly, the other nuclear weapon states—the United

Kingdom, France, and China—are unwilling to join in disarmament efforts until the United States and Russia restore the momentum toward reductions in their own nuclear arsenals.

This problem could be dealt with in several ways. To start, Washington and Moscow should tell their story better. For instance, in addition to eliminating weapon systems, they have closed and eliminated a considerable number of facilities for producing warheads. This process has been especially active in the United States, but also—increasingly, and with U.S. help—in the Russian Federation.

More important, however, would be bilateral steps to reduce the number of warheads. Such steps would have to be taken without compromising the security of sensitive warhead information. This concern could be met by recent technical advances such as information barriers, which permit monitoring of warheads without direct physical access to them by the inspectors. The United States and Russia could also take advantage of innovative transparency measures already in place for ongoing nonproliferation projects such as the Highly Enriched Uranium Purchase Agreement (“HEU deal”). They could also take advantage of recent U.S.-Russian efforts to enhance the safety and security of warheads.

More bilateral attention to controlling warheads is thus a realistic goal that would underscore for the international community that the United States and Russia are serious about their commitments to reduce nuclear weapons. Better bilateral controls, even if they did not immediately involve monitoring the elimination of warheads, would have the added benefit of improving protection against terrorist theft or other illicit acquisition of nuclear warheads and materials.

While the United States reduces the size of its nuclear arsenal, it must also maintain an effective, reliable nuclear deterrent. This will be necessary as long as nuclear threats remain in the world. Politically, reductions can only be accomplished against the backdrop of a strong national commitment to well-maintained nuclear forces. This raises a critical question: How can the United States best sustain the reliability of its nuclear arsenal without nuclear testing?

Since the moratorium on nuclear testing was established in the early 1990s, the United States has relied on science-based stewardship of the stockpile. U.S. laboratories have developed a number of activities to ensure that U.S. nuclear weapons are well maintained and will perform according to their specifications at any time and under any circumstances. This performance capability is certified on an annual basis.

Some experts nonetheless argue that weapons reliability cannot be maintained without testing. They emphasize that the stockpile stewardship program cannot sustain the human capital—the scientific expertise—needed for a weapon program. They also argue that if the United States abandons its testing program, it will not devote the resources needed to maintain the physical testing infrastructure.

However, it will be impossible to urge the rest of the world to accept a stronger nonproliferation regime if the United States is testing nuclear weapons. Nor is there a need to. The U.S. nuclear arsenal is so considerable that should the science-based stockpile stewardship program detect a flaw in one of the many deployed nuclear weapons, alternative nuclear assets would be available. Furthermore, since the test ban is not a unilateral undertaking, other nuclear weapon states face similar or more difficult

challenges, which means that the United States should be able to maintain its clear technical superiority. The United States also should be able to maintain the expertise and morale of its nuclear weapon specialists at least as well as other countries operating under the same constraints.

On balance, overall U.S. security would be best served by a ratification of the Comprehensive Test Ban Treaty and, until that happens, by continuation of the indefinite moratorium on testing.

SUMMARY OF POLICY RECOMMENDATIONS

- ▶ The objectives of preventing the spread and use of nuclear weapons should now drive U.S. nuclear policy. (p. 133)
- ▶ While nuclear threats remain in the world, the United States must maintain an effective nuclear deterrent. (p. 133)
- ▶ The role of nuclear weapons in national security policy should be de-emphasized, and the norm against the use of these weapons should be strengthened. (p. 137)
- ▶ The United States should halt research into and development of new nuclear weapons, pursue ratification of the Comprehensive Test Ban Treaty and continue a moratorium on testing in the meantime, and continue to develop non-nuclear strike assets. (pp. 134–137)
- ▶ The United States and Russia should reduce nuclear risks by standing down from hair-trigger postures and by ending preemptive strategies and the forward deployment of nuclear weapons. (p. 139)
- ▶ The United States should work with Russia and other countries to restore the momentum toward verifiably and irreversibly reducing nuclear weapons and materials. (p. 147)

Disarmament

Article VI of the NPT obligates parties to “pursue negotiations in good faith on effective measures relating to cessation of the nuclear arms race at an early date and to nuclear disarmament.” In 2000, this obligation was reaffirmed by an “unequivocal undertaking” of treaty members “to accomplish the total elimination of their nuclear arsenals.”⁹⁷

Many officials in nuclear weapon states think this commitment should not be taken seriously today. Recognizing this, many states in the rest of the world hesitate to strengthen enforcement of nonproliferation because they believe that the nuclear weapon states are not committed to disarmament. States that have given up programs to produce nuclear weapons are particularly frustrated. Argentina, Brazil, Canada, Germany, Japan, South Africa, and Sweden are among the influential countries that demand clearer commitments to disarmament in order to ensure their continued cooperation in nonproliferation efforts. These states’ commitments to abjure nuclear weapons must not be taken for granted; in some cases it is conceivable that decisions could be made to hedge nuclear weapon options. More immediately, these states are vital to the making and enforcing of the rules on which effective nonproliferation depends.

Like it or not, the United States and the other nuclear weapon states must address the disarmament issue more directly than they have in the past. In the near term, the P-5 must comply with commitments made in 1995 when persuading the rest of the world to indefinitely extend the NPT and the thirteen steps adopted at the 2000 NPT Review Conference (see “The Thirteen Steps,” page 151).

THE THIRTEEN STEPS

The 2000 NPT Review Conference, the first since the Non-Proliferation Treaty was indefinitely extended in 1995, was highly contentious. The United States focused on threats posed by North Korea, Iran and Iraq, while the non-nuclear weapon states expressed frustration over the pace of the weapon states' compliance with their disarmament obligation.

To maintain the regime in this divisive environment, the parties agreed to establish clearer benchmarks for effecting and measuring the weapon states' commitment to fulfill Article VI. Parties stated their commitment to an "unequivocal undertaking...to accomplish the total elimination of their nuclear arsenals," and backed it up by specifying thirteen steps they would take:

- ▶ early entry into force of the Comprehensive Test Ban Treaty
- ▶ a moratorium on all types of nuclear explosions, pending entry into force of the treaty
- ▶ conclusion within five years of a verifiable fissile material cutoff treaty
- ▶ establishment within the Conference on Disarmament of a subsidiary body to work solely on nuclear disarmament
- ▶ application of the principle of irreversibility to all nuclear arms control
- ▶ an unequivocal commitment by the nuclear weapon states to full nuclear disarmament

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THE THIRTEEN STEPS (continued)

- ▶ early entry into force of START II, the conclusion of START III negotiations, and the preservation of the Anti-Ballistic Missile Treaty
- ▶ completion of the Trilateral Initiative among the United States, Russia, and the IAEA
- ▶ steps by all the nuclear weapon states toward nuclear disarmament, including a unilateral reduction in nuclear arsenals, increased transparency, the reduction of the number of tactical nuclear weapons, a reduction in the operational status of nuclear weapon systems, and a diminished role for nuclear weapons in security policy
- ▶ a commitment by the nuclear weapon states to allow the inspection and disposition for peaceful purposes of all excess fissile material
- ▶ reaffirmation of the goal of complete disarmament under effective international control
- ▶ regular reports by all states on the implementation of Article VI of the Non-Proliferation Treaty
- ▶ improved verification capabilities

Agreement on these specific benchmarks signified an important and often overlooked evolution. Whereas many non-nuclear weapon states had in the past simply insisted on the need for complete disarmament, now they accepted a more realistic, incremental approach. Thus, the Thirteen Steps entailed a major political compromise: a fallback from the absolute language of Article VI.

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THE THIRTEEN STEPS (continued)

Failure to take the Thirteen Steps seriously would therefore have serious political consequences. It would inspire even greater resistance by the non-nuclear weapon states to new measures to strengthen the nonproliferation regime, and could undermine willingness to maintain the regime at all. Unfortunately, little progress has been achieved to date.

To make matters worse, the Bush administration has suggested that it may repudiate the commitment entirely. In May 2004, then Assistant Secretary of State John Wolf stated, “The world moves on and the discussion ought not to be locked in 2000. . . . We could return to 2000 and pretend that the next five years did not exist, but we would rather start in 2005.”^a Adaptability to changing circumstances is wise, but the United States has proposed nothing to replace the obligations it would be unilaterally disavowing (perhaps to the relief of Russia, China, France, and the United Kingdom). Why then should other governments not feel free to renege on the political obligations their predecessors negotiated?

It is difficult to imagine a more damaging approach to the creation of a rule-based international security system, which every U.S. leader since Dwight Eisenhower has sought in order to manage nuclear technology. If “might makes right” is to guide the nuclear weapon states’ approach to the nonproliferation bargain, the world should not be surprised when other states begin to view development or acquisition of nuclear weapons as a natural move by the weak to neutralize the advantage of the strong.

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THE THIRTEEN STEPS (continued)

Note

- a Wade Boese and Miles Pomper, "The Bush Administration's Nonproliferation Policy: An Interview with Assistant Secretary of State for Nonproliferation John Wolf" May 13, 2004. Available at www.armscontrol.org/interviews/Wolf.asp (accessed December 7, 2004).

To further demonstrate their commitment to this process, the nuclear weapon states should use the occasion of the 2005 NPT Review Conference to urge the UN Security Council to request that *all* states possessing nuclear weapons or stocks of fissile materials publish white papers addressing the series of questions listed below. In this way, the United States and other nuclear weapon states could move from a defensive to an offensive strategy on the disarmament question. In addition, the nuclear weapon states should make proponents of disarmament go beyond high-minded slogans and wrestle with the immensely difficult technical and political security challenges that must be overcome in order to eliminate nuclear arsenals.

For states with nuclear weapons, what technical facilities, capabilities, and procedures would be required to verifiably eliminate each nation's nuclear arsenal and securely dispose of the fissile materials contained in them? Physically, how long would a phased dismantlement and disposition process take? What technologies and procedures would be necessary to allow international verification of nuclear disarmament while protecting sensitive weapon design information or other knowledge from being "proliferated"?

For all states possessing nuclear weapon materials (including Israel), what is the national capacity to account for all fissile materials produced?⁹⁸ Given that most of the acknowledged nuclear weapon states do not have accurate records of their production of nuclear weapon materials in the distant past, what procedures or policies do states recommend to provide high confidence that no state is secreting away material or weapons while claiming to have eliminated its nuclear arsenal, or to have never possessed one in the first place?⁹⁹ For all states with unsafeguarded fissile materials, what level of confidence would the state require in disarmament verification before it could verifiably dismantle the last nuclear weapon or put the last kilogram of fissile material under IAEA safeguards?

Would the production of fuel for nuclear reactors, including plutonium separation, be feasible in a world without nuclear weapons, where sensitivity to proliferation risk would be even greater than today? Would such production need to be managed differently? If so, why and how? What would be the cost implications for nuclear power generation?

Asking and answering these questions is a minimal way for the nuclear weapon states (and others with stocks of fissile material) to demonstrate that they take their disarmament obligation seriously. In the world of government, a policy for which no bureaucratic tasking has been made simply does not exist. The assignment of agencies and individuals to prepare the white papers would display some seriousness of purpose, create some internal governmental focus on disarmament, and, most important, provide a means of detailing some of the extremely challenging problems that must be overcome to create a world without nuclear arsenals.

The published white papers should be addressed by an international forum, with the Conference on Disarmament or the IAEA the most obvious extant possibilities. India, Israel, and Pakistan, as members of these organizations, should be expected to produce such papers. Public versions of these papers should then be made available for analysis and debate by concerned citizens, NGOs, and intergovernmental bodies that have an interest in these topics. The United Kingdom has set an important precedent for beginning such work.¹⁰⁰

International debate on these papers would force an appreciation of the challenge of nuclear disarmament. Not only states with nuclear weapons, but all states that possess nuclear materials and related infrastructure, would have to achieve greater transparency. Gaps in accounting of nuclear weapon materials would be inevitable, raising international security questions that are off the radar screen today. In short, expectations regarding the challenges and benefits of complete nuclear disarmament would receive the serious scrutiny they deserve.

The United States and other cofounders of the nonproliferation regime recognized that the imbalance between nuclear “haves” and “have nots” would be unstable over time. The obligation to pursue nuclear disarmament sprang from this understanding. If, upon examination, the challenge of eliminating the absolute last nuclear weapon is too fraught with uncertainty and too technically, politically, and economically demanding, an alternative basis must be found for stabilizing the nuclear order. This will require a shared understanding that expectations need to be adjusted. All of this can be done within the framework of the universal rules and mechanisms outlined in the present strategy report, building on the NPT foundation.

SUMMARY OF POLICY RECOMMENDATIONS

- ▶ Reaffirm and act to implement the thirteen steps agreed to in 2000, or negotiate and implement similar disarmament steps. (p. 150)
- ▶ To demonstrate commitment to disarmament, the nuclear weapon states and states with stocks of fissile materials should publish white papers detailing how they could dismantle their nuclear arsenals or account for and securely store all their fissile materials in a verifiable manner as would be required in a world without nuclear weapons. These papers should be discussed and debated in an appropriate international forum. (p. 154)