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TOWARD A NUCLEAR WEAPONS FREE WORLD?

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Doubts about the wisdom of relying on nuclear weapons are as old as nuclear weapons themselves. But despite this questioning, nuclear weapons came to be seen as the indispensable element of American (indeed Western) security during the Cold War. By the 1970s and 1980s, however, discontent was growing about the intense US-Soviet nuclear arms competition, as it failed to provide any enduring improvement in security; rather, it was seen as creating ever greater risks and dangers. Arms control negotiations and limitations, adopted as a means to regulate the technical competition, may also have relieved some of the political pressures and dangers. But the balance of terror, and the fears of it, continued. The Strategic Defense Initiative (SDI) under President Reagan was a very different approach to escaping from the precarious protection of nuclear weapons, in that it sought a way to continue to defend the US and the West, but without the catastrophic risks of mutual deterrence. As such, SDI connoted unhappiness with the precarious nuclear balance and, for many, with nuclear weapons in general.

The disappearance of the Warsaw Pact, the disintegration of the Soviet Union, and the sudden end of the Cold War seemed to offer a unique opportunity to fashion a new, more peaceful world order that might allow for fading away of nuclear weapons. Since nuclear weapons had emerged in response to the Cold War, it seemed natural that reconsidering, indeed refashioning the place of nuclear weapons in national and international security should be a first order task.

Approaches to a nuclear weapons free world

Scholars have foreseen two different paths to a nuclear free world.² The first is a fundamental improvement in the relationships between states such that nuclear weapons are no longer needed. For many years it was prominently argued that only the establishment of a world government could create conditions of peace and security that would allow nuclear weapons to be abolished. The development of nuclear weapons, with their devastating power, it was argued, that made such a transformation from a world of nation-states to a world government mandatory. Disfavored by history and by closer analysis, the idea of world government has for the most part been dismissed as utopian and probably undesirable. A more realistic analysis suggests that, although nation-states will not disappear, a process of positive political evolution may gradually efface the causes of conflict between nation-states, to the point that war, at least large-scale war between the major powers, will no longer occur. The advance of global communications, the intermingling of national economies, the universal diffusion of Western ideals and norms, the growing costs of large-scale war -- all are changes said to be making major wars simply

¹ Los Alamos National Laboratory strongly supports academic freedom and a researcher's right to publish; therefore, the Laboratory as an institution does not endorse the viewpoint of a publication or guarantee its technical correctness.

² See for example, Paul C. White, Robert E. Pendley, and Patrick J. Garrity, "Thinking About No Nuclear Forces", in Regina Cowen Karp, ed., *Security Without Nuclear Weapons? Different Perspectives on Non-Nuclear Security*, Oxford: Oxford University Press, 1992, pp. 102-127.

unacceptable. In fact, some scholars argue that these facts, rather than nuclear deterrence, were primarily responsible for the absence of major war since World War II. In this context nuclear weapons would gradually fade into the background, and perhaps, later, could be eliminated altogether. Those who argue for this case claim that it is by no means utopian: in North America, in Scandinavia, and even in Western Europe (not to say the Balkans), war has indeed become almost unthinkable. It is no longer impossible to think that these zones of stability and peace could be expanded much more widely, creating conditions for nuclear abolition.³ The language that NATO uses about expanding the “zone of stability” into Eastern Europe by means of NATO enlargement reflects this thinking.

The second path toward a nuclear free world is through technological development. Technologies such as highly-effective missile defenses could provide effective protection against nuclear attacks. Or precision, long-range conventional weapons could become so effective that they could offer an attractive strategic war fighting capability to a nation able to master them. Either technological development might, at least in theory, obviate the need for nuclear weapons. Theory aside, both a more peaceful world and the de-emphasis of nuclear weapons seem more plausible in the aftermath of the Cold War.

Thinking about Nuclear Weapons in the United States

The vision of a new world order and nuclear disarmament has been widely discussed in the United States. As Russia turned in the direction of democracy and a market economy in the early 1990s, and continued to pursue both negotiated and unilateral nuclear arms reductions, it became possible to think that the drawdown of nuclear weapons, embodied in the INF Treaty and in START I and II, could proceed much farther. For example, a major study by the US National Academy of Sciences in 1991 concluded that US nuclear weapons could be reduced safely to 1,000 to 2,000 weapons.⁴ Others suggested that nuclear weapons might be eliminated altogether, or at least repudiated as legitimate tools of international relations.⁵

The principal argument for nuclear disarmament was that nuclear weapons simply were not needed any longer. Nuclear weapons may have been essential in the context of the Cold War confrontation, where the Soviet Union led a configuration of states hostile to the survival of the West, and deployed superior conventional military forces. But the end of the Cold War greatly diminished the military power of the former Soviet Union, while politically the Russian Federation seemed to be seeking a democratic partnership with the West. Indeed, the United States was determined to take whatever positive steps it could to encourage the evolution of Russia into a democratic state with a free market economy that could be a “partner” to the West. Worries about the success of Russia’s transformation remained, as did concern about the implications of China’s rise toward great power status. But an effort to reduce the prominence of nuclear weapons in international affairs, while continuing to reduce their numbers, seemed a good way to reassure Russia and China about Western intentions, while we sought to encourage them toward domestic reform and integration into a peaceful international system.

³ Ken Booth and Nicholas J. Wheeler, “Beyond Neuclearism”, in *Security Without Nuclear Weapons?*, op. cit., pp. 40-55.

⁴ Committee on International Security and Arms Control, National Academy of Sciences, *The Future of the U.S.-Soviet Nuclear Relationship*.

⁵ For an insightful analysis of US attitudes toward nuclear weapons following the Cold War, see Stephen A. Cambone and Patrick J. Garrity, “The Future of US Nuclear Policy,” *Survival*, vol. 36, no. 4, winter, 1994-1995, pp. 76-99.

Since it was possible that Russia and China would not pose a major security threat, the chief remaining security concern for the United States in the early 1990s seemed to stem from potential regional conflicts, and from the proliferation of nuclear weapons and other weapons of mass destruction. The end of the Cold War posed the risk that these regional tensions and proliferation pressures, held in check by the superpower confrontation, would be unleashed, posing new threats to global stability and national interests. These concerns were supplemented by worries that the enormous nuclear weapons arsenal, materials, and expertise of the Soviet Union would leak out to potential proliferators in the disorder that followed the dissolution of the Soviet Union. But here again, the more promising way to address emerging proliferation problems seemed to be to control and reduce nuclear weapons. In this context, many Americans concluded that the most compelling reasons to retain nuclear weapons were evaporating, that the dangers of continued reliance on them were manifest, and therefore that a determined, if gradual, reduction in reliance on nuclear weapons, aiming at their eventual elimination, might be a sensible policy.

While this questioning of the continued need for nuclear weapons was going on, a second line of argument also cast doubt on nuclear weapons. According to this thinking, even if nuclear weapons remain potentially valuable tools of national security for some nations, the continued existence of nuclear weapons (especially in light of the lessons of the Gulf War) no longer served American interests. That is the United States, because of its superiority and virtuosity in advanced non-nuclear weaponry, would be better off in a world without nuclear weapons, if only that were possible.⁶ Les Aspin, Chairman of the House Armed Services Committee and soon to be Secretary of Defense, wrote in 1992 that "during the Cold War, the United States and its NATO allies relied on nuclear weapons to offset the conventional superiority of the Warsaw Pact in Europe. . . . Today, however, . . . the United States is the biggest conventional force on the block. Nuclear weapons still serve the same purpose -- as a great equalizer. But it is the United States that is now the potential equalizer." That meant that "today, if offered that magic wand to eradicate the existence and knowledge of nuclear weapons, we would very likely accept it"⁷ Aspin himself was skeptical that nuclear weapons could be completely eliminated, but he was convinced that the continued possession of large nuclear stockpiles by the major powers tended to encourage the view that nuclear weapons are important instruments of national policy, and so encouraged nuclear proliferation. Accordingly, a major commitment supported by real movement toward disarmament on the part of the nuclear weapons states was needed, politically, to solidify nonproliferation norms and halt further proliferation. Such an approach would lead to the minimization of reliance on nuclear weapons and nuclear stockpiles, with the implication that their elimination would be desirable, if difficult to achieve.

While arguments favoring reducing or eliminating reliance on nuclear weapons were prominent and widespread in the US in the early 1990s, that is not to say that voices were not raised in favor of retaining substantial nuclear forces. Those wishing to do so worried, first and foremost, about the future of Russia. Russia was lagging behind in the nuclear reductions called for in START I, and the fate of START II was not known. Even after START II, Russia would retain a very large nuclear arsenal capable of devastating the United States. It was by no means certain that the Russians would choose to abandon their reliance on nuclear weapons. Moreover, there was deep concern that democratization and incorporation of Russia into a stable world order would not succeed, that the advocates of

⁶ Some in the US Air Force argue that a strategic, non-nuclear strike can achieve the same goals as a nuclear attack, but without the collateral damage or all of the other uncertainties associated with nuclear weapons. See for example John A. Warden, III, *The Air Campaign: Planning for Combat* (Brassey's US, 1989).

⁷ Les Aspin, *From Deterrence to Denuking: Dealing with Proliferation in the 1990s*, Feb. 18, 1992, p. 4.

reform in Russia would fail, to be replaced by a more hostile nationalist or communist regime. This could lead to a reemergence of a direct Russian threat to the US, or to increased risks of confrontation through Russian efforts to re-absorb the states of the former Soviet Union. China also, although possessing a small nuclear arsenal and only modest capability to threaten the United States directly, remained an inscrutable factor in the new world order, and recognition was growing that China would, if growth trends continued, become a dominating player on the world scene early in the 21st century. In the aftermath of Tienanmen Square, this prospect was viewed with anxiety. And finally, the possibility that regional states hostile to the United States could pose direct and serious challenges to US interests was amply demonstrated by proof that Iraq had been on the way to acquisition of nuclear weapons when the Gulf War broke out. Nuclear weapons might thus be needed to provide deterrence of the use of weapons of mass destruction against US forces and interests outside the context of a major power confrontation. Accordingly, efforts to encourage non-proliferation ought not go so far as to challenge the credibility or legitimacy of America's nuclear deterrent.

Secondly, nuclear weapon advocates claimed that the US nuclear arsenal had helped hinder nuclear proliferation. That is, those states that sheltered under the US nuclear umbrella during the Cold War did not find it necessary to develop their own nuclear weapons. If the world turned into a dangerous place again, and in the absence of effective US nuclear deterrence, there could be a risk that some of these states could re-evaluate their decision to remain non-nuclear. And finally, there was a sense that nuclear weapons, as the most powerful and intimidating force in the world, provided a general element of reassurance to the United States against unknown and unanticipated developments, and therefore that the United States would relinquish its most important security guarantee if it went non-nuclear. But pro-nuclear arguments were very hard to state publicly, in part because they suggested a failure to appreciate the changes that had overtaken the world ("old-think"), and rejection of the opportunities those changes had brought about, and in part because any recitation of the advantages of nuclear weapons for the US would tend to run counter to our attempts to talk other states out of reliance on nuclear weapons (i.e., it would undermine nonproliferation norms.)

Such were some of the views in the United States opposing (and in favor of) continued reliance on nuclear weapons. In this intellectual climate, Secretary of Defense Aspin initiated a major review of US nuclear forces and policies, which concluded in late 1994. It was clear that many officials in government and analysts outside government believed that the "Nuclear Posture Review" would and should call for major changes in US nuclear policy: substantial further reductions in nuclear weapons, a no-first-use pledge, commitments to future reductions linked to nonproliferation objectives, adoption of safer operational practices, and so on. Most importantly, many sought a clear indication that the United States sought to place nuclear weapons on the path of ultimate extinction.

Instead, the review reached a more balanced conclusion: plans were presented for reducing US nuclear forces down to the START II level of 3,500 weapons in compliance with the START II Treaty, and the study indicated that the US would be willing to consider further reductions once that Treaty was in place and if reductions in Russia were proceeding well; moreover, the United States would continue to lead efforts toward a less-nuclear, more secure world. The study also endorsed a number of measures to increase the safety and security of US nuclear forces, including taking nuclear-armed bombers off alert, "de-targeting" ICBMs and SLBMs, and installing permissive action links on SLBMs. But at the same time, the study acknowledged that nuclear weapons were not about to disappear. The United States would need to continue to rely on nuclear weapons for its security, although the role of nuclear weapons would be reduced. The policy also called for the US to be cautious, because the world might not evolve peacefully. The "hedge" aspect of the

policy entailed storing a number of nuclear warheads that might be reloaded on delivery vehicles if the threat to the United States did not continue to decline as anticipated, or in the face of a re-emergent threat. The hedge also included direction to the Department of Energy to maintain a highly capable nuclear weapons design and production capability, even though no new demands for nuclear weapons were foreseen. This general approach of striving to "lead" a process toward a less nuclear world, while continuing to rely on nuclear weapons for basic security and "hedge" against the possibility of a major new threat to US security, has guided US policy toward nuclear weapons and nuclear deterrence since 1994.

Views of other nuclear states

Although less captivated by the prospects for fundamental improvement in the post-Cold War world, the other four acknowledged nuclear weapon states also have modified their attitude and plans regarding nuclear weapons. With the exception of China, all have made negotiated (Russia) or unilateral reductions in their nuclear forces. All, some under considerable pressure from the United States, have agreed to a nuclear testing moratorium and now support the conclusion of a zero-yield, comprehensive nuclear test ban treaty (CTBT). But none of these states, except in a certain way China, have officially cast doubts on the efficacy of or continuing need for nuclear weapons and nuclear deterrence.

The Russian Federation in particular, given its new circumstances following the collapse of the USSR, has taken a more positive view than the United States of the future role of nuclear weapons. In November, 1993, Russia adopted and published a new military doctrine for the post-Cold War era. The new doctrine says that the threat of global military conflict has diminished, and that Russia no longer has any enemies. Still, the doctrine identifies several military dangers to Russia, while noting that Russia no longer has the conventional military forces to deal effectively with those threats:

As a result of the general crisis encompassing the post-Soviet space and all spheres of its public life, including military, the combat potential of the former Soviet Army has diminished sharply, military technology is backward in a number of indices in comparison with the West, and Russia cannot immediately develop new types of up-to-date precision conventional weapons Consequently, . . . nuclear weapons remain nearly the sole deterrent means against a potential aggressor.⁸

Not only were nuclear weapons to become an even more prominent element of Russian security posture; by dropping Russia's nuclear no-first-use pledge, the role of nuclear weapons was deliberately expanded to the explicit deterrence of certain non-nuclear threats to Russia's security.⁹

Despite this enhanced reliance on nuclear deterrence, Russia seems prepared to further reduce the size of its nuclear forces by concluding START I reductions and probably ratifying and implementing START II. Moreover, because of structural problems that the START II treaty is said to create for Russian nuclear forces, some Russian experts have indicated an interest in somewhat further reductions below the START II level. But these reductions are not aimed at eliminating reliance on nuclear weapons. Deputy Defense Minister Andrei Kokoshin has stated that "Russia will continue to develop nuclear weapons . . . to the extent necessary while strictly observing its own national interests and

⁸ "General Summary of RF Military Doctrine", A.V. Vakhrameyev, *Novaya Rossiya*, 1994. Translated in Federal Broadcast Information Service, *Central Eurasia*, 28 February 1995.

⁹ See the extensive and critical discussion of the meaning of this provision in Sergei Rogov, "Russia's New Military Doctrine, Part II," in Joint Publications Research Service, *Central Eurasia*, 17 August, 1994.

international obligations.”¹⁰ Indeed the Russians, like the United States, have made it plain that they intend to retain the reliability of their nuclear forces, even under a comprehensive test ban treaty. Russia is reportedly modernizing both its ICBM and SLBM forces. (Expand, footnote) Reports also indicate that Russia is developing a new, nuclear-capable, tactical ballistic missile.

Similarly, the British government has firmly believed for a long time that its own nuclear forces provide an irreducible element of national security. This view did not change with the end of the Cold War. A British commentator, while acknowledging recent British nuclear reductions, has noted that in Britain “There has been no indication of sympathy with the tendency, prominent in the United States, to question the continuing utility, even legitimacy of nuclear weapons.”¹¹ Britain has made decisions to reduce its nuclear forces unilaterally by eliminating dual-key nuclear artillery and missiles, maritime nuclear systems, and gravity bombs, leaving only Trident missiles on submarines to serve in both strategic and theater deterrent roles. It should be noted that Britain is nearing completion of its nuclear submarine modernization program, and so is assured of an effective nuclear force for many years into the future. But the British are quite clear that they believe the fundamental roles of their nuclear weapons -- to provide stability in Europe through NATO, and to serve as the ultima ratio of national survival against nuclear or massive conventional attack -- will not change.

The French view of the future of nuclear weapons in many ways parallels that of the UK. The French also foresee a more constricted role for nuclear deterrence. And like the British, they have taken major decisions to reduce the size and diversity of their nuclear forces, in this case abandoning their land-based strategic and tactical missiles and relying in the future on four nuclear ballistic missile submarines and a small force of tactical aircraft armed with medium range nuclear missiles. But the French leave no doubt that they intend to modernize their remaining nuclear forces and maintain them into the indefinite future. For France, “the risks to face are less imminent and more diffuse and varied than before, but they persist and may even grow over the foreseeable period.” Accordingly, the “French concept continues to be defined as the will and capability to make any adversary . . . fear unacceptable damages that are out of proportion with the stakes of the conflict if he tries to attack our vital interests.”¹² The determination of the French to complete their final nuclear test series, despite substantial political pressure put on them by many other states, is a measure of the France’s commitment to retain the ability to rely on their nuclear deterrent. The test series apparently was designed to complete development of a warhead for their M-51 submarine-launched ballistic missile, confirm confidence in the reliability of existing warheads, and provide data for their scientific program, which will help France to assure confidence in their nuclear forces in the future without nuclear testing.¹³

While the French deterrent, like the British, seems primarily meant to preserve French and European security in the event of a degradation of the security environment in Eurasia, the French differ from the British by asserting that their nuclear weapons are also meant to deter threats to France and French interests from weapons of mass destruction from other regions, particularly the northern Mediterranean.¹⁴ France’s nuclear force also serves the

¹⁰ “Kokoshin on Problems of Deterrence”, Speech at 40th Anniversary of VNIITF, 22 June 1995, translated in Federal Broadcast Information Service, *Central Eurasia*, 28 September 1995.

¹¹ Nicholas K.J. Witney, “British Nuclear Policy After the Cold War,” *Survival*, Vol. 36 No. 4, Winter, 1994-1995, p. 97.

¹² French Ministry of Defense, *Livre Blanc de Defense*, 1994, p. 50.

¹³ “Chirac Says France’s N-Tests are Over,” Reuters, January 29, 1996.

¹⁴ See the valuable discussion of the evolution of French nuclear doctrine in David Yost, “Nuclear Debates in France,” *Survival*, Vol. 36, No. 4, Winter 1994-1995, pp. 118-121.

political purpose of providing a strong voice and enhanced influence over the evolution of European security policy. Both Britain and France have been reticent to engage in negotiations as the means to reduce nuclear weapons; it has been suggested that their unilateral reductions, either accomplished or announced, will help to forestall those who would beckon them to join the formal arms control process.

Similarly the NATO alliance has long relied on nuclear weapons as a centerpiece of its defense strategy. Following the end of the Cold War, NATO massively reduced its nuclear weapons holdings and deliberately de-emphasized nuclear deterrence and indicated that nuclear weapons for the Alliance are "weapons of last resort." But at the same time NATO affirmed its continuing nuclear reliance, and has not wavered in that decision even amidst the controversy over NATO enlargement. In fact, the NATO strategy review served to revive and reinforce NATO's appreciation of the essential role that nuclear forces still play in Atlantic security. It is unlikely that NATO will relinquish nuclear weapons any time soon.

China has a long-standing and vocal commitment to universal nuclear disarmament, but has pursued a determined if modest nuclear weapons program since the 1950s, and continues to place great importance on its own nuclear force. China calls for further superpower nuclear reductions, but says it will not enter negotiations itself until American and Russian forces are down to China's level. Chinese nuclear arms control policy differs from that of the other nuclear weapon states in that China has announced a no-first-use policy, and calls for the other nuclear powers to join. China's declared policy for its nuclear forces is "limited deterrence," which seems in the main to be a threat to retaliate against urban targets in response to nuclear aggression. But Chinese doctrine also speaks of the ability to control and limit nuclear escalation, and an interest in attacking counterforce targets.¹⁵ On the other hand, Chinese nuclear forces seem neither numerous enough nor sophisticated enough to carry out the more ambitious aspects of Chinese doctrine. This shortfall reportedly is being remedied by the development of a new generation of more modern and survivable land-mobile and sea-based missiles.¹⁶ The recently-completed Chinese nuclear test series apparently was designed to complete development of warheads for these new MIRVed, mobile, solid-fueled missiles. China's determined completion of this test series, like France's, indicates a significant commitment to continued reliance on nuclear forces into the future. Now that the Chinese have ceased nuclear testing and favor the completion of a CTBT, they probably have fewer capabilities than the other nuclear states to assure the reliability of their weapons without testing.

In addition to the declared nuclear weapons states there are, of course, the three "threshold states" which have been the focus of international pressure and diplomacy to turn back their weapons programs. Despite this pressure, neither India, Pakistan, nor Israel shows any sign of abandoning their nuclear weapons in the foreseeable future, and in fact the decision of the Indians to block consensus on a CTBT, and perhaps openly declare themselves a nuclear weapons state, suggests that here, too, there is a strong and abiding inclination to retain nuclear weapons. And the continuing interest of at least a few additional states in developing their own nuclear weapons indicates that the appeal of nuclear weapons has not been eliminated, perhaps has even been stimulated, by the end of the Cold War.

The Future of nuclear weapons

¹⁵ Alastair Johnston, "Chinese Nuclear Doctrine and the Concept of Limited Deterrence", Report prepared for the Center for National Security Studies, Los Alamos, NM, December, 1994.

¹⁶ John Wilson Lewis and Hua Di, "China's Ballistic Missile Programs," in *International Security*, Fall, 1992, Vol. 17, No. 2.

Summarizing the current scene, it is clear that nuclear weapons will be with us for foreseeable future although, perhaps, in a reduced, safer, less prominent role. The West is unified in its desire to expand the realm of democracy and security in Eurasia, while the United States in particular, working with Japan and others is trying to set the stage for a peaceful, cooperative security regime in the Pacific region. The United States may continue to press hard for further movement toward the minimization or even elimination of nuclear weapons, but other nuclear states are almost certainly going to be more cautious. Still, there has been a gradual progression toward capping and rolling back nuclear weapons stockpiles, and toward reducing reliance on nuclear weapons for national security. This fact has been highlighted in the past year by the indefinite extension of the Nonproliferation Treaty and by agreement on the part of the acknowledged nuclear weapon states to nuclear testing moratoria. In particular, these moratoria and a possible CTBT place the nuclear weapon states in a much more difficult position, technically, for maintaining the safety, security, and reliability of their existing nuclear weapons, and the inability to test, should it continue, will pose a formidable obstacle to the development of sophisticated new weapons. Still, all of these states seem to be committed to maintaining effective and reliable nuclear deterrent forces. The failure to get weapon state agreement to a time-bound schedule for complete nuclear disarmament is yet another sign that there will be a stopping point in the process of nuclear force reduction and de-legitimation. It is likely to take a dramatic further improvement in interstate relations, or advances in technology that make nuclear weapons less significant (and verification of complete nuclear disarmament less critical), before the end of the nuclear weapons era will be in sight.

Issues in a Less-Nuclear World

If it is true that nuclear weapons will be with us for some time to come, then there are several pressing items on the nuclear weapons agenda that still require serious attention. In a general sense, they are :

- work to create an international security environment in which nuclear weapons are little needed;
- reduce nuclear stockpiles to the lowest level possible commensurate with legitimate national security needs;
- reduce as far as possible the potential dangers associated with the possession of those weapons that remain; and
- prevent further nuclear proliferation.

Create an international environment where nuclear weapons are less important.

Admitted or not, the primary reason nuclear weapons retain their high salience is the possible return to hostility among the great powers, especially the nuclear weapon states. The priority diplomatic task of the post-Cold War period is to facilitate the incorporation of Russia and China into a stable world order, in ways that do not re-emphasize nuclear weapons, regenerate confrontations, or pose security threats. There is quite a lot of agreement that the West would like to see internal democratization and a normalization of external relations among the nuclear states. But even the United States has limited ability to make positive changes occur in Russia and China, and it is not yet not clear that what we wish for matches the real objectives and aspirations of those states. The other concern that causes nuclear weapons to remain important is the likelihood that intense hostility or insecurity, still prevalent in some regions of the world, will stimulate proliferation of

weapons of mass destruction, crisis, or war, leading to the possible intervention of nuclear states. The primary means to expand the regions of peace and stability and prevent future crisis are diplomatic and, perhaps, economic. Nuclear weapons are quite obviously cast only in a supporting role, a fact that highlights the subservience of nuclear weapons to improvement or degeneration of the overall security context. Because of the large uncertainties that still exist about the direction of global change, the nuclear weapons states are practicing considerable caution, retaining nuclear deterrence in the event the democratic enterprise of the post-Cold War era fails.

Reduce the nuclear forces of the nuclear weapon states to the lowest level commensurate with the prevailing security environment..

It is widely argued that nuclear arsenals, even after START II, will be larger than needed for legitimate security purposes, that the more weapons there are, the larger will be the risk of accident or theft, and that further reductions are needed to set an example for possible proliferants. The US government is continuing to draw down its strategic nuclear forces rapidly to the START I treaty limits, and has laid plans to reduce down to START II levels. Recently, the Senate ratified START II, and the United States is encouraging the Russian parliament to do the same. The situation in Russia is uncertain, but following the election of Boris Yeltsin there is renewed hope for START II ratification, although perhaps with some troublesome conditions that could hinder entry-into-force.

Both the United States and the Russian Federation have indicated interest in nuclear force reductions beyond START II. Some Russians seem to favor modest further reductions to accommodate structural problems in their forces under START II and to assure greater equality between US and Russian forces. **(Add: Russian objections to START II)** The United States government is likely to continue its efforts to assure the deployment of strategically stable force structures (i.e., continuing and reinforcing the shift toward survivable, second-strike forces), and may be interested in adding direct limitations on nuclear warheads. There are arms control advocates inside and outside the US government who favor numerical reductions to 2,000 weapons or less. But force planners will want to be sure that further reductions in delivery systems, should they occur, will not render elements of the Triad economically or operationally untenable (e.g., would it make sense to retain two SSBN bases if the Navy had fewer than 14 submarines?) There will also be concern by both the Russians and Americans that the nuclear forces of the other nuclear weapon states be taken into account if reductions go much below current levels. However, the British, French, and Chinese all seem determined not to be drawn into negotiations on reductions of their nuclear systems. The other intractable issue between the US and Russia is over the role of ballistic missile defenses and their relationship to strategic offensive force reductions. While strong differences continue over this issue, it may prove possible to craft a compromise that will allow the US to deploy a limited defense against small ballistic missile threats, that would not seriously undermine Russia's retaliatory potential. Some such compromise is likely to be necessary to permit further offensive force reductions.

Toward the end of the Cold War, and following the elimination of intermediate and shorter range nuclear missiles under the INF Treaty, the remaining non-strategic nuclear forces (NSNF) became a particular item of concern because of their obvious warfighting orientation, and because of their vulnerability to theft or terrorism. But proposals in the late 1980s to negotiate their reduction or elimination stalled, because of the special difficulties in verifying an agreement, and because of the significance that NATO attached to retaining some NSNF in Europe to underpin its flexible response strategy. Instead of negotiated reductions, the US and the Soviet Union announced the mutual unilateral withdrawals of most of these weapons in 1991, and Russia announced the withdrawal of its remaining

non-strategic weapons from the former Soviet states into Russia following the collapse of the Soviet Union. These actions largely removed NSNF as an issue between the US and Russia, at least for the time. Because these reductions were voluntary and unilateral, they were not subject to any form of outside verification or confirmation.

From a military point of view, the end of the NATO/Warsaw Pact confrontation largely eliminated any immediate need for short-range nuclear weapons, although NATO reaffirmed the importance of a small residual stockpile of US nuclear weapons, stationed in Europe, to demonstrate the continued linkage of Europe's defense to the US nuclear deterrent. Even so, NATO has reduced its Europe-based holdings to a few hundred gravity bombs available for deployment on dual-capable aircraft. The United States retains in addition a small number of non-strategic weapons, including warheads for TLAM-N submarine-launched cruise missiles, that could be re-deployed in the face of threats to Europe or other vital American interests. Recently, concerns have arisen about Russian intentions regarding non-strategic nuclear forces. Almost no information is available about the dismantlement or disposition of the weapons removed from the former Soviet states (in 1991 the US estimated only that 5-12,000 of these weapons remain,) while large numbers of NSNF, such as _____, may remain with Russian forces. **(Get official information and fn)** Recently, apparently unofficial Russian statements have threatened re-deployment of NSNF, including into Belarus, as a counter to NATO enlargement. Concerns have also been raised about Russian development of a new short-range, possibly nuclear-capable missile, the SS- . **(details)**

Accordingly, calls have been made for codifying by treaty the unilateral reductions made by the US and Russia, which might allow for confirmation that these weapons have been withdrawn or eliminated, and would reduce the chances that NSNF could rapidly be reintroduced. Others have suggested the establishment of a Baltic-to-the-Black-Sea nuclear free zone. Several problems could prevent an NSNF agreement. First, the new Russian military doctrine -- which is apparently defensively oriented, relies more heavily on nuclear weapons, and has abandoned the idea of nuclear no-first-use -- could well see tactical nuclear weapons as a valuable supplement to conventional forces in defending Russia from the (highly unlikely) possibility of invasion. That is, non-strategic nuclear forces may have a renewed military importance in Russian eyes. Secondly, while the US and NATO might favor ways to assure themselves of Russian NSNF reductions, they might worry that entering into negotiations could cast into jeopardy NATO's ability to retain even its minimal nuclear force in Europe. And finally, there are questions of verification of an agreement (e.g., it would be necessary to verify the non-existence of nuclear warheads that are small, easy to hide, and easily re-loaded onto dual-capable delivery systems). For now, change in the status of NSNF hindered by these unresolved concerns and intertwined with the NATO enlargement debate. However, consideration of a START follow-on treaty that somehow placed limits on warheads could help to resolve some of the technical difficulties that currently stand in the way of progress on negotiated NSNF reductions.

Reduce the nuclear dangers associated with continued reliance:

If nuclear weapon states are likely to keep nuclear inventories for many more years, they will have to assure that their remaining weapons pose as few dangers of accident, misuse, diversion, or environmental damage as possible. They should have fully effective safety and security measures, efficient and fool-proof command and control technologies and procedures, and redundant guarantees against unintentional or accidental launch. These matters are the subject of the closest attention in the United States, Britain, and France. In Russia following the collapse of the Soviet Union, however, many concerns arose about the effectiveness of protection of and controls over nuclear weapons. The situation in

China is largely unknown, although procedural assurances are probably very tight, as they were prior to the collapse of the Soviet Union. Of course, it is possible that safety and control technologies in the threshold states or new nuclear weapon states may be quite rudimentary.

The dismantlement of nuclear arsenals, desirable on its own merits, poses additional problems. There is a need to deal effectively with excess nuclear weapons and fissile materials, to prevent nuclear proliferation risks. The reduction of the nuclear weapons infrastructure, particularly in Russia and the other nuclear states of the former Soviet Union, also runs the risk of making unemployed nuclear weapons experts available to states that might want to develop their own nuclear weapons.

Americans, Europeans, Scandinavians, Japanese and others have moved quite swiftly and effectively to address many of the nuclear weapons problems that arose with the collapse of the Soviet Union. The United States, through the Cooperative Threat Reduction program and the Laboratory-to-Laboratory program, has helped the Russians to eliminate the weapons removed under START, and to secure and consolidate their excess nuclear weapons. Considerable progress has also been made in providing technologies and techniques for the protection, control, and accounting of fissile materials in the Russian nuclear weapons complex, and work is continuing to assist with the secure storage of excess weapons materials, and for the establishment of associated transparency measures to track nuclear materials as they pass from weapon system through dismantlement to ultimate storage or disposal. The US weapons Labs, under the direction of the government, are also discussing enhanced security and safety measures for remaining Russian nuclear weapon inventories. Programs under CTR and Lab-to-Lab also are designed to provide alternative, non-defense work for Russian nuclear weapon scientists and engineers, so they are not tempted to sell their expertise to possible proliferators. Meanwhile, in the United States a major program has been instituted to deal with the environmental damage caused by five decades of nuclear weapons research and production, an area of great concern in the former Soviet Union as well.

The second, very different aspect of nuclear danger for the United States is the possibility that the reliability or effectiveness of its remaining nuclear weapons will deteriorate due to aging processes or other unforeseen events, and that we will not be able to diagnose or remedy problems without nuclear testing or an active program of weapons production and replacement. In one way or another, all of the nuclear weapon states face a similar problem. As part of the nuclear hedge strategy, the US Department of Energy has been directed to assure the safety and effectiveness of remaining US nuclear weapons for the foreseeable future -- far beyond the normal lifetime of those weapons, and without nuclear testing. Indeed as part of his decision to commit the United States to a zero-yield nuclear test ban, President Clinton ordered a four-point program for assuring nuclear effectiveness and reliability, and even indicated that the United States would consider withdrawing from a CTBT if problems in the stockpile could not be fixed without nuclear testing.¹⁷ As a

¹⁷ The "safeguards" for US adherence to the CTBT, as announced by President Clinton on August 11, 1995, are as follows: A Comprehensive Test Ban Treaty (CTBT) is conditioned on:

- A. The conduct of a Science Based Stockpile Stewardship program to ensure a high level of confidence in the safety and reliability of nuclear weapons in the active stockpile, including the conduct of a broad range of effective and continuing experimental programs.
- B. The maintenance of modern nuclear laboratory facilities and programs in theoretical and exploratory nuclear technology which will attract, retain, and ensure the continued application of our human scientific resources to those programs on which continued progress in nuclear technology depends.
- C. The maintenance of the basic capability to resume nuclear test activities prohibited by the CTBT should the United States cease to be bound to adhere to this treaty.

result, the United States has developed an elaborate, scientifically sophisticated program at its nuclear weapons Laboratories that is designed to enable it to identify, evaluate, and rectify any age-related problems that occur over the years, and if necessary to remanufacture weapons where other remedies are not possible. In endorsing the zero-yield provision, President Yeltsin listed a number of provisions for the Russian weapons program quite similar to those of the US. Indications are that the other nuclear weapon states also envision continued reliance on their nuclear weapons for the indefinite future, and will also put in place programs designed to assure the reliability of their weapons even in the presence of a CTBT.

In this regard, the United States has traditionally cooperated closely with the British on nuclear weapons development, testing, and reliability. This cooperation is scheduled to continue, while the British also pursue their own national activities to retain confidence in their nuclear weapons. Also, the United States and France have shared information on nuclear weapons over the years (**get info on government release of information on this**); by recent agreement, and in light of France's nuclear testing moratorium, this cooperation will continue and even expand. Moreover, the French are pursuing their own reliability program which includes, as in the United States, a strong emphasis on improving the basic scientific understanding of nuclear weapons-related processes. Apart from this close cooperation with its traditional nuclear allies on nuclear weapons safety, security, and reliability, the United States has held preliminary discussions with the Russian nuclear institutes on the safety and security of their nuclear weapons. However, no mechanism exists for classified discussions, and the US laboratories have received government guidance to stay far away from weapons design or reliability issues.

It is arguable that the US has an interest in the safety and security of all nuclear weapons everywhere, in assuring nuclear materials protection, control, and accounting, especially in states not under full-scope IAEA safeguards, and in drawing the nuclear establishments of such states into the world community to deal with arms control technology and nonproliferation concerns. In this regard, it is possible that the US, along with other nuclear weapon states, could modestly expand their cooperation with the Russian Federation, as well as China. Beyond China similar concerns exist regarding the nuclear weapons activities of the threshold states, but here the preferred solution is nonproliferation. The US certainly does not want to encourage, or seem by its actions to acquiesce in, the nuclear ambitions of these states.

Limit proliferation of nuclear weapons .

Nuclear deterrence proved to be remarkably durable, effective, and even safe in the Cold War setting, although it did not seem so at the time. However, the emergence of nuclear

- D. Continuation of a comprehensive research and development program to improve our treaty monitoring capabilities and operations.
- E. The continuing development of a broad range of intelligence gathering and analytical capabilities and operations to ensure accurate and comprehensive information on worldwide nuclear arsenals, nuclear weapons development programs, and related nuclear programs.
- F. The understanding that if the President of the United States is informed by the Secretary of Defense and the Secretary of Energy -- advised by the Nuclear Weapons Council, the Director's of DOE's nuclear weapons laboratories and the Commander of the U.S. Strategic Command -- that a high level of confidence in the safety and reliability of a nuclear weapons type which the two Secretaries consider to be critical to our nuclear deterrent could no longer be certified, the President, in consultation with Congress, would be prepared to withdraw from the CTBT under the "supreme national interests" clause in order to conduct whatever testing might be required.

weapons in more volatile settings, for example in the context of regional rivalries and conflicts (Iraq/Iran, India/Pakistan), could prove wildly destabilizing. Moreover, from the parochial point of view of the United States, the introduction of nuclear weapons into such settings might drastically impede the possibility for the United States or multinational coalitions to project force and keep the peace. For example, studies in the United States have shown that Iraqi possession of a modest nuclear arsenal would have demanded a fundamental rethinking of the US approach to the Gulf War.

In recent decades, the Nonproliferation Treaty, IAEA safeguards, nuclear supplier restraints, and the US nuclear umbrella have created an environment of restraint toward nuclear proliferation. Because of mutual recognition of the dangers posed by nuclear proliferation, there was generally good cooperation on nonproliferation activities between the US and the Soviet Union during Cold War. Much of this cooperation still endures, although new concerns emerged as traditional Soviet mechanisms for controlling nuclear weapons, materials, and expertise weakened as the Soviet Union dissolved, and as Russia's economic collapse inflated the risk of illicit trafficking in nuclear weapons-related materials. (add fn. Pilat) As a result, the major joint efforts noted earlier have been undertaken to reduce the risks of nuclear smuggling or diversion. Yet differences have arisen in other areas, for example over the Russian sale of a nuclear reactor to Iran and its attendant proliferation risks. Similarly, the US has had a series of differences with China over nuclear-related exports and a disturbingly relaxed Chinese record on risky nuclear exports. The determined activities of Iraq, Iran, and North Korea remind us that the possibility still exists for the emergence of new nuclear weapons states, relying on a combination of indigenous resources and illegal imports. While the record on nonproliferation has been quite good, analysts are now raising warning flags about the possibility of a new round of proliferation, for example in Northeast Asia. And even if overt proliferation can be prevented, there is a growing chance that the capability to develop and produce nuclear weapons on short notice, the phenomenon of "virtual proliferation" will grow inexorably with the expansion of nuclear energy.

A number of international efforts to discourage the further spread of nuclear weapons and other weapons of mass destruction have been undertaken, and many have succeeded. The indefinite extension of the Non-Proliferation Treaty was accomplished in 1995, and the nuclear weapon states have adopted several positions designed to demonstrate their good faith with Article VI of the Nonproliferation Treaty. Article VI calls on signatories "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, and to a treaty on general and complete disarmament." Although the example of the nuclear weapon states is probably a minor aspect of a state's decision to pursue or forego a nuclear weapons program, action of the nuclear weapon states on Article VI has become a central and emotional issue for some of the non-nuclear weapon states. The states of the Conference on Disarmament have nearly succeeded in negotiating a Comprehensive Test Ban Treaty, another key issue for many non-nuclear states. Nuclear-weapon-free-zone agreements, including the South Pacific Nuclear Weapons Free Zone Treaty and the African Nuclear Weapon Free Zone Treaty (Treaty of Pelindaba), have been concluded, and a nuclear weapon free zone treaty for Southeast Asia is likely to be finalized if small concerns about treaty language can be worked out. In addition to these arms control measures, other very aggressive, sometimes controversial efforts have been taken by the United States, the UN, and others in trying to impede the nuclear weapons aspirations of states such as Iraq, North Korea, and Iran. The US has attempted to dissuade other nations from expanding the use of nuclear energy, because of its weapons potential, although it has not gained much support in the rest of the world. As a result, it may be necessary to deal with the resurgence of nuclear energy and its attendant proliferation risks.

As this listing suggests, there is a history of success and good reason for optimism that nuclear proliferation can be controlled. The risks of proliferation stemming from the collapse of the Soviet Union are declining, and the efforts to stop the weapons programs in Iraq and North Korea seem to be succeeding. But at the same time, there is a sense that we are on razor's edge in nonproliferation efforts. The continuing diffusion of weapons-related knowledge, the possible explosive growth of nuclear energy, and the possibility that several states, especially in Northeast Asia, could choose to develop nearly-nuclear weapons capabilities call for continuing vigilance and careful attention to the evolution of effective regional security regimes.

Conclusion

A nuclear weapon-free world is not just over the horizon. There are hopeful signs for the expansion of regions of democracy, peace, and security in the world, and in this context there might be real movement toward a less nuclear and less dangerous world. But the renewal of serious international differences, accompanied by a re-nuclearization of international security, is also a very real possibility. There is a large agenda of nuclear-related issues that require attention and whose resolution will contribute to de-nuclearization, if becomes possible, but which, being resolved, will enhance security and safety in either a nuclear or non-nuclear world. But a major danger, especially for the United States, is to guard against undermining the legitimacy of nuclear weapons and deterrence in the West until we are sure that we can safely dispense with these awesome weapons.