THE COMPREHENSIVE NUCLEAR TEST BAN TREATY
And
THE SURVIVAL OF THE NUCLEAR NON-PROLIFERATION TREATY

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Thomas Graham, Jr.

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Stemming the proliferation of nuclear weapons is unquestionably the greatest challenge facing the world community now and for the foreseeable future. As President Jacques Chirac of France, and Prime Minister Tony Blair of the United Kingdom and Chancellor Gerhard Schroeder of Germany noted in their October 1999 *New York Times* op-ed: "As we look to the next century, our greatest concern is proliferation of weapons of mass destruction , and chiefly nuclear proliferation. We have to face the stark truth that nuclear proliferation remains the major threat to world safety." The costs and benefits of the Comprehensive Nuclear Test Ban Treaty (CTBT) should thus be weighed in the context of this overarching international security objective—preventing nuclear proliferation.

The most immediate effect on the Nuclear Non-Proliferation Treaty (NPT) of the Senate's refusal to give advice and consent to the CTBT in 1999 was to slow agreement by many NPT countries to the new tougher International Atomic Energy Agency (IAEA) inspections for all non-nuclear-weapon NPT parties. After the first Gulf War, as a result of Iraq's success in hiding its clandestine nuclear-weapon activities, the U.S. helped lead an effort at the IAEA to strengthen NPT safeguards to detect clandestine activities in the territory of non-nuclear-weapon NPT parties. The more intrusive safeguards were finally adopted as policy by the IAEA Board of Governors and General Conference in 1997 in

the form of an Additional Model Protocol, but each NPT Party had to sign and then ratify this amendment to its safeguards agreement with the IAEA to make the more intrusive safeguards applicable to itself. The Director General of the IAEA at this time said, "The Senate vote against the ban on nuclear tests was a devastating blow to our efforts to gain acceptance of more intrusive inspections of nuclear facilities around the world." While not all were expected to – especially those like North Korea that are suspect, some 60 countries signed the agreement after the 1997 IAEA decision. Following the Senate's vote on the CTBT, the ratification process of this Additional Protocol proceeded very slowly and as of the end of 2002, only 18 NPT Parties had ratified it.

A senior IAEA expert explained that "innovations like this require diplomatic momentum, and without the U.S. in the lead, momentum disappears." He added that even "reliable countries are dragging their feet asking why they should accept new burdens if America is turning its back on nuclear disarmament." Until reliable countries accept the new IAEA safeguards, he said, the IAEA cannot put much pressure on suspect countries. The American ambassador to the IAEA commented that : "The greatest danger is not that the NPT will dissolve but that it will atrophy. . . ."

Soon after that vote in 1999, according to State Department officials who follow the implementation by other countries of export controls required by the NPT, some states began acting as if the NPT requirements had been relaxed. These NPT States Parties appeared not to be enforcing with the same rigor NPT prohibitions on exports of nuclear materials, equipment and related technologies to states that do not accept full-scope IAEA safeguards over their nuclear activities. These countries might have been saying: "If the United States is not going to enforce proliferation prevention measures

such as the CTBT on itself, why should we enforce other non-proliferation requirements on ourselves?"

If the United States Senate is unwilling to approve the CTBT in the years ahead, what could happen? Unquestionably, the NPT would be substantially weakened. This would be seriously detrimental to both United States and international security, as the NPT has been critical both in constraining the spread of nuclear weapons to new nations and in rolling back proliferation in nuclear weapon capable countries such as Belarus, Kazakhstan, South Africa, Argentina, Brazil, and Ukraine.

Of course, if the U.S. does not ratify then the CTBT will not go into effect for any country because the United States is a necessary party. Eventually, India and Pakistan may well resume nuclear testing. If India tests, China may use that, and the failure of the United States to ratify, as reasons for it to resume testing. China may want to produce smaller nuclear warheads so that its missiles can carry multiple warheads and decoys to confuse and overwhelm interceptor missiles from the U.S. national missile defense system. If China tests, and North Korea proceeds ahead with an overt nuclear weapon program as its recent behavior suggests, what would Japan and South Korea do? I want to emphasize this is analysis not prediction.

Japan has been a leader in trying to bring the CTBT into force at the earliest possible date. But if India, Pakistan, and China resume testing, if North Korea is moving toward acquisition of nuclear weapons and if the CTBT cannot go into effect because of the U.S. Senate rejection, how long might it be before some future Japanese government could consider a secret program to build nuclear weapons to protect itself? Japan felt threatened in 1998 by the combination of the Indian-Pakistan nuclear tests in May and a

North Korean Taepo Dong rocket that flew over Japan a few months later. A parliamentary vice minister for defense in Japan was forced to resign in 1999 when he suggested that Japan build nuclear weapons after these events. Although officially Japan remains steadfastly against becoming a nuclear-weapon state, he was certainly not the only one in Japan with this view. Japan, like other NPT States Parties, has the right to withdraw from the NPT on three-months notice "if it decides that extraordinary events, related to the subject matter of this treaty, have jeopardized the supreme interests of its country."

If Japan withdrew from the NPT, would South Korea be far behind? Korea has been invaded by both China and Japan in this past. It could well feel threatened by events in North Korea, if China had resumed testing, and if Japan had withdrawn from the NPT. South Korea had a nuclear-weapon program in the 1970s but was dissuaded from pursuing it by the United States. If it withdrew from the NPT, it could produce nuclear weapons in a short time. Taiwan also had an incipient nuclear weapon capable program in the 1970s. Thus, a dangerous nuclear weapons spiral could be created way in Northeast Asia.

Might results comparable to these take place in other parts of the world, the Middle East for example? As we have seen, of the states in the region essential for entry into force, Egypt and Iran are likely to wait on Israel before ratifying, and Israel is likely to wait on the United States. But Iran is acquiring a nuclear power reactor and enrichment facilities, and both countries have trained nuclear experts. This is how the failure to bring the CTBT into force could eventually contribute to the potential spread of

nuclear weapons to several countries in the Middle East as well as in North East Asia and perhaps, elsewhere in the world, ultimately leading to the dissolution of the NPT.

Finally, in addition to the slowdown in acceptance of stronger IAEA safeguards and the possible withdrawals by non-nuclear weapons states from the NPT, the Treaty will be weakened in another way. U.S. failure to ratify the CTBT casts doubt on the credibility of the commitment in the NPT, to "negotiate in good faith on effective measures relating to the cessation of the nuclear arms race at an early date and to nuclear disarmament." In this context "cessation of the nuclear arms race," from the very beginning meant first and foremost, a CTBT. This is made clear by the preamble of the NPT and from statements by negotiating parties in 1968.

At the 1995 NPT Extension Conference, the United States and the other four NPT nuclear-weapon parties agreed that they would complete negotiation of a CTBT by 1996. This was probably the single most important promise made to gain wide support from non-nuclear weapons states for making the treaty permanent. For many nations, carrying out this promise was a test of the sincerity of the United States and the other NPT nuclear-weapon states with respect to their NPT obligation to "negotiate in good faith" to halt the nuclear arms race and reduce their nuclear weapons. This obligation is what many non-nuclear-weapon parties have long relied upon to reduce what they perceived as discrimination against them authorized by the NPT.

But a CTBT is overwhelming in the security interests of the United States. It is verifiable, and the reliability and effectiveness of the U.S. nuclear stockpile in no way would be diminished under a CTBT. The United States currently has a significant advantage over Russia and China, and indeed the rest of the world, in terms of the

sophistication of its nuclear arsenal and the depth of knowledge related to nuclear-weapon technology possessed by its nuclear scientists. This advantage was developed by the conduct of well over 1,000 nuclear explosive tests—greater than the combined total of nuclear tests conducted by the rest of the world—and translates into a United States nuclear deterrent of unmatched effectiveness. [1]

Modern nuclear weapons, with thousands of individual parts, are complex. There is no substitute for a nuclear explosive testing program involving full-scale tests to provide confidence in the reliability of a new design of a second-generation thermonuclear weapon. No responsible political leadership, no competent modern military authority, and no nation depending on nuclear weapons for a credible deterrent could be expected to deploy a modern lightweight two-stage, thermonuclear weapon without a full-scale test program. For its part, the United States typically used on average six explosive tests before certifying its new weapons designs. France reportedly used as many as 22 tests. Thus, the CTBT would keep new designs for advanced weapons out of the stockpiles of Russia, China, and the United States as well as the other states with nuclear weapons. Thus under a CTBT, the U.S. arsenal would continue to consist of the world's most advanced weapons. In addition, no nation is better prepared to maintain the reliability of nuclear weapons, in a non-testing environment, than the United States. The information gathered by U.S. scientists through the nation's extensive nuclear testing program contributes to the effectiveness of the Stockpile Stewardship Program (SSP) which, if properly funded, will be able to ensure that the safety and reliability of the U.S.

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[1] The Soviet Union/Russia conducted 715 tests and China 45. The United Kingdom, which has had access to U.S. test data, has conducted 45 tests. France

nuclear arsenal will not erode over time. The leadership of the United States in the realm of supercomputer development, which is essential to the success of the SSP, further ensures this advantage. In effect, under a CTBT, no other nation will be more capable than the United States of maintaining its arsenal without testing.

And further, the end of the Cold War has signaled a dramatic change in the U.S. nuclear weapons program. The continuous cycle of developing, testing, and deploying new nuclear weapons has ended. As announced by President George H.W. Bush in 1992, the United States does not need to develop new nuclear warhead designs for deployment. It was this decision that opened the possibility of the CTBT.

The United States now relies on an expanded program of stockpile stewardship to ensure that:

- the enduring arsenal remains reliable, effective and safe into the indefinite future without nuclear explosive testing;
- it maintains competence in nuclear weapons; and
- it retains the technical capability and manufacturing infrastructure in order to respond, as required for U.S. security, to changed strategic circumstances.

Today, the nuclear weapons that are designed to remain in the enduring stockpile are, and will remain for the foreseeable future, effective, safe, and reliable. Confidence in today's stockpile is based on understanding gained from almost 50 years of stockpile surveillance, and the experience and analyses of a very large number of nuclear tests, including more than 150 nuclear tests of modern weapon types over the past 25-30 years.

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has conducted 210.

The overwhelming majority of U.S. nuclear tests during the Cold War were devoted to developing for deployment new and more advanced warheads and weapons systems. Only a very small percentage, well under 10% of the underground nuclear explosive tests of modern weapons from 1972 to the end of testing in 1992 by the U.S., were stockpile confidence tests; i.e., tests conducted on currently deployed weapons to confirm confidence in them. That is well less than one test per year for the whole arsenal of many thousands of weapons.

The CTBT in no way limits most of the testing and analysis work that goes on in connection with maintaining the U.S. deterrent. This includes testing the performance of the warhead, including the high explosives that initiate the implosion in the primary leading up to the ignition of the fission stage itself. Flight tests of the missiles and their guidance systems will continue. All of the approximately 6,000 parts of the nuclear warhead, other than the nuclear package, will continue to be tested under the SSP as they have been for more than 40 years. Statistically significant number of such experiments have been carried out and provide meaningful measures of high confidence in the U.S. systems. Functional testing of the non-nuclear components of a nuclear warhead and flight-testing of the weapons system are not—and will not be—restricted by a CTBT.

The current testing moratorium by the five recognized nuclear-weapon states—which for the United States has been in effect since 1992—is at present, only a political commitment. When the CTBT comes into force, it would make this political commitment legally binding and thereby legitimize a range of actions by the international community in support of the ban and, if necessary, in response to a possible nuclear test by any nuclear-weapon capable nation. And pursuant to the Vienna Convention on the

Law of Treaties, which is reflective of customary international law, all signatories to the CTBT are legally bound not to conduct nuclear explosive tests, unless they formally withdraw their signature.

The establishment of this international ban on testing, together with the monitoring network that would be in place, would come at little additional cost. Whether or not the CTBT enters into force, political realities are such that unless the other major nuclear powers resume testing (and three of them, France, United Kingdom, and Russia have already ratified the CTBT), it will be difficult (but I would have to say not impossible) for the United States to ever test nuclear weapons again. This situation was reinforced by the agreement of all NPT parties at the 2000 Review Conference, including the United States, to a testing moratorium pending entry into force of the CTBT. This makes the unilateral resumption of testing of a violation of an NPT-related commitment.

With regard to verification concerns, the CTBT will ensure that all parties will have considerably more information about what is happening at United States, Russian, and Chinese tests sites. The International Monitoring System (IMS) established pursuant to the CTBT will enhance efforts to monitor international nuclear explosive test activities. The new system will consist of 321 monitoring stations around the world some 47 percent of which is now complete, the construction of including a significant number in Russia and China, augmenting existing the capabilities that exist in the United States and elsewhere. It will formally also establish a regime for on-site inspection as well as the first truly high-tech arms control treaty verification regime relying on seismic monitoring, radionuclide sensing, a hydroacoustic network, and an infrasound network.

There remains, nevertheless, concern among opponents of the test ban in the United States that nations will be able to hide nuclear explosive tests in environments that will "decouple" their seismic signatures or otherwise prevent their detection However, only nations with advanced nuclear testing programs and extensive underground testing experience are likely to be able to conduct such deceptive tests whose preparation and yields would have to be carefully controlled. This rules out India, Pakistan, and Israel as well as the so-called "states of proliferation concern." The United Kingdom cannot conduct any tests as long as the U.S. test site is closed. France has not tested on its European territory and has closed its test facilities in the South Pacific. As a result, decoupling is a concern for the United States that can realistically only be directed toward Russia and China. Whatever the shortcomings of the IMS in this regard may be, the United States will be better able to monitor suspicious activities as the Lop Nor and Novaya Zemlya test sites and elsewhere in these countries with the CTBT and its IMS in force than without.

This is not to say that detecting deceptive tests of sub-kiloton yield will be easy. Since it is assumed that the United States as a open society would not be able to do such tests, this could be translated into a strategic disadvantage for the United States. As the 1995 JASON Report in the United States makes clear, however while testing at one-half kiloton could confer some marginal benefits, it would only be meaningful if testing went undetected over a long period of time. Russia and China might be able to conduct a few low-yield tests and evade detection, but an extended series, which is the only way any benefits could be derived from such tests, would not be possible to hide. Six IMS stations detected the Kara Sea seismic event near Novaya Zemlya in 1997 with a

magnitude 3.5 on the Richter scale, which corresponds to a nuclear explosion with a yield of less than 1 kiloton. This is a good indication that the IMS, which has been significantly improved in the nearly six years since that event and which will continue to be upgraded, can reasonably be expected to detect even very low-level events in regions of concern.

General John Shalikashvili, former United States Chairman of the Joint Chiefs, completed a Report on CTBT in January 2001 and submitted it to President Clinton before he left office, General Shalikashvili concluded that the net impact of the CTBT is that, on balance, the Treaty would enhance United States security in numerous ways.

He stated that there are, of course, risks but they exist with or without the Treaty.

- A potential proliferent state with the necessary knowledge, materials, and technology could assemble an unsophisticated nuclear device and be relatively confident that it would work without testing it. The CTBT is not a proliferation cure-all, but by supporting other elements of an integrated non-proliferation strategy, it will make this scenario less likely.
- There always will be some gap between zero-yield and the lower limit of remote sensing capabilities to detect, identify, and locate an explosion. With on-site inspections and other sources of information, though it is more likely that very low-yield testing would be detected or deterred with the CTBT than without it.
- Experienced nuclear weapon states could engage in some evasive testing. However tests that are small and infrequent enough to avoid detection would not permit them to develop new weapon systems and eventually even such violations are likely to be caught.

- The Stockpile Stewardship Program in the United States is designed to discover and resolve potential problems that might affect weapon safety or reliability, but no one can guarantee that a nuclear test will never again be needed. The Treaty's ratification makes this less of a concern by strengthening bipartisan support in the United States for effective stockpile stewardship and by formalizing domestic safeguards to ensure that the United States could be ready to test again if ever necessary for its national security.
- The CTBT will complicate and slow down the efforts of aspiring nuclear states, especially regarding more advanced types of nuclear weapons.
- It will hamper the development of nuclear weapons based on new designs and will essentially rule out certain advances.
- It will add to the legal and political constraints that nations must consider when they form their judgments about national defense policies.
- The CTBT is vital to the long-term health of the Nuclear Non-Proliferation Treaty, and will increase support for other elements of a comprehensive non-proliferation strategy.
- The United States is well positioned to sustain its nuclear deterrent under the CTBT.
- The verification regime established under the Treaty will enhance the United States' own very capable nuclear test monitoring system and foster new techniques to improve verification.

- The Treaty will make it easier to mobilize domestic and international support for clarifying ambiguous situations and for responding vigorously if any nation conducts a nuclear test.

General Shalikashoili concluded his Report by saying that he believed that it is very much in the national interest of the United States to secure the above benefits through entry into force of the Comprehensive Test Ban Treaty. As I indicated earlier, U.S. ratification of the CTBT is essential, indeed is a *sine qua non* to CTBT entry into force. And I further believe as General Shalikashvili has made clear CTBT ratification if looked at objectively is overwhelming in the national security interest of the United States. If this opportunity is lost, the global campaign against nuclear proliferation will be severely, and perhaps irreparably damaged.

With this background, where should we judge the CTBT process to be today? The new Administration in Washington came to office in January 2001 with a distinctly negative view of the arms control process of the last forty years and of the CTBT in particular. Then-candidate Bush in 2000 stated that while he supported the nuclear test, moratorium, he opposed the CTBT on the grounds that it was not verifiable and that over time, it would diminish the effectiveness and reliability of the United States nuclear stockpile. The Administration in 2001 also brought to Washington, D.C. a penchant for unilateralism over traditional multi-lateral international security diplomacy. This trend was intensified after September 11, 2001. These two policy orientations came together in four developments that significantly affect the CTBT and its prospects for entry into force.

First the new Administration reiterated the policy enunciated by candidate Bush in 2000 that it would support the on-gong nuclear test moratorium but would not support United States ratification of the CTBT. Also, it did not dispute the judgment that under the Vienna Convention of the Law of Treaties and international law the United States is legally bound not to conduct nuclear test explosions as long as it remains a signatory to the CTBT.

In early 2002, the administration released its Nuclear Posture Review drafted by the Department of Defense but approved by the Administration as a whole. It was released against the background of anonymous hints by unnamed Administration sources in the press that the United States might have to resume nuclear-weapon testing in the relatively near future to develop a new type of small nuclear device that could burrow into the ground before detonating and which could be used to destroy deep underground storage facilities for weapons of mass destruction maintained by rogue states.

The NPR itself stated that it was the intention of the Administration to maintain a robust nuclear weapon capability for the indefinite future—it spoke of potential new types of nuclear weapons system thirty or more years into the future. The NPR also asserted the value of nuclear weapons for possible use against Iran, Iraq, North Korea, Syria, and Libya as well as against Russia and also China in the context of a conflict over Taiwan.

Third, in September 2002, the Administration released its new National Strategy document. This Document set forth a new departure for United States national and international security strategy. In this Document, while mentioning the need to update international law rules on the law of national self defense to reflect current realities, it

went on to say that the threat of weapons of mass destruction in the hands of rogue states and international terrorist organizations is so severe that it would justify a policy of preemptive military action to prevent the use of such weapons. The Document states that these states and groups could strike without warning using such weapons and cause casualties and destruction on a scale hitherto unimaginable. Therefore, the United States would be justified in striking first, anywhere it is necessary, in order to defend itself.

Fourth, in December of 2002, the Administration published an addendum to the National Strategy document focused on weapons of mass destruction. In this Document, it is reiterated that preemptive military action may be necessary to contain the proliferation threat even while the importance of compliance with international agreements such as the NPT is emphasized. This Document contains an implication, when read together with the NPR, that the possible use of nuclear weapons are part of this strategy. And this Document was released against the background of anonymous Administration news leaks to the effect that traditional non-proliferation policies had failed and that counter-proliferation policies—read preemptive military action—are the only route to safety.

Article XIV of the CTBT makes some 44 states necessary parties to the entry into force of the Treaty. This number includes the five NPT-recognized nuclear-weapon states, India, Pakistan, Israel, and North Korea. The United Kingdom, France, and Russia as well as Japan, another important state in this process, have ratified the Treaty. India, several years ago, promised that it would seriously consider CTBT ratification, and this would have brought along Pakistan as well. Understandably however, India made clear that it considered itself "off the hook" after the October 1999 vote of the United States

Senate rejecting the CTBT. China and Israel are waiting for ratification by the United States.

That brings us to the case of North Korea. North Korea has of course taken no step to ratify the CTBT and has recently renounced the NPT. It has restarted its nuclear reactor and dismissed International Atomic Energy inspectors from the country. North Korea may have separated enough plutonium for one-to-two nuclear weapons in 1988 but in the some 8,000 spent nuclear fuel rods that it now possesses it without question has the capability to reprocess these rods in a relatively short time and acquire enough plutonium for five-to-six nuclear weapons. And the operation of its reactor will produce more spent fuel rods in the future. North Korea has also admitted to a uranium enrichment nuclear weapon program. This is truly an alarming situation, but one which can be positively resolved in my opinion, if the correct policies are followed. What should be pursued I believe are direct United States—North Korea negotiations in which Washington would consider giving North Korea what it seems to want: diplomatic recognition, a security guarantee, economic assistance, and trade opportunities. These would not be a great sacrifice in that time is on our side with respect to the eventual peaceful resolution of the long-standing confrontation on the Korean Peninsula. In exchange, the United States should insist on, among other things, a verifiable end to all programs in North Korea related to nuclear weapons development with IAEA inspectors on the ground, the return of North Korea to the NPT and who knows, maybe if policies change, North Korean CTBT ratification.

Thus, the obvious is the fact that CTBT entry into force is entirely dependent on developments in the United States. Therefore, while I believe that those states that are

participants in this year's Entry into Force Conference could, under international law, adopt a protocol bringing the CTBT into force for them or approve provisional entry into force, I do not believe this would be wise. Also, an amendment to the Treaty could be agreed to informally—outside of the Treaty amendment process—and informally recommended to all states that have ratified the Treaty, changing the Article XIV requirements, but I do not believe this would be wise either.

Rather, I would urge that all states that have ratified the CTBT to make it a standing policy of never missing an opportunity to impress firmly on Washington the importance to them of the CTBT. This, I believe is the only practical way forward. After all, as I tried to demonstrate earlier, the CTBT is overwhelmingly in the interests of the United States. Indeed, in my judgment, it is demonstrable that the NPT itself which is of paramount importance to the United States eventually may not be able to survive without a CTBT.

From the earliest of times, after the completion of the negotiation of the NPT in 1968, the NPT non-nuclear-weapon states emphasized that the number one quid for their quo of renouncing nuclear weapons was an end to nuclear-weapon tests, that is a CTBT. This has been reiterated at every NPT Review Conference since and was an express condition of the indefinite extension of the NPT in 1995.

And despite all that has happened in the last few years, the United States may yet ratify the CTBT. This would permit entry into force of the CTBT and save a threatened NPT. It may be that in the aftermath of the war in Iraq, the United States may return to its historic mission of pursuing a world community based on cooperation, security, and international law and treaty arrangements. Many commentators in the United States have

urged that it do so including General Wesley Clark, Supreme NATO Commander during the conflict in Kosovo. He said in *The Washington Pos*t on March 23 "It would be far better to recognize, as many are belatedly doing, that victory in Iraq will not come from fighting alone, but rather what happens afterwards. And for this, we must gather legitimacy from institutions such as the United Nations and NATO . . . above all, we must not use our presence in Iraq as a launching pad for self glorification, imperial pretenses, or further expeditions but as an opportunity to strengthen the international institutions that we have spent more than 50 years developing and nourishing."

And there are, in my opinion, two times in the four-year cycle of the American Presidency when the United States is most likely to change policies to respond to the political exigencies of the moment: during a Presidential campaign year to respond to issues raised during the Campaign or the first six months after a Presidential election when a newly-elected or re-elected President is empowered to carry out commitments made or judgments held. So let's all stay the course, eventually we will get there.