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Prospects for U.S. Ratification of the Comprehensive Test Ban Treaty

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"The one major area ... where the end is in sight, yet where a fresh start is badly needed, is in a treaty to outlaw nuclear tests. The conclusion of such a treaty, so near and yet so far, would check the spiraling arms race in one of its most dangerous areas. It would place the nuclear powers in a position to deal more effectively with one of the greatest hazards which man faces ... the further spread of nuclear arms. It would increase our security. It would decrease the prospects of war. Surely this goal is sufficiently important to require our steady pursuit"

-- President John F. Kennedy, June 10, 1963

After decades of unsuccessful U.S. and Soviet negotiations to ban nuclear test explosions, multilateral negotiations on a Comprehensive Test Ban Treaty (CTBT) succeeded in producing an agreed text in August 1996. On September 24, 1996, the treaty was opened for signature at the United Nations in New York. Today, leaders from 177 countries, including the United States, Russia, the United Kingdom, France, and China, have signed the CTBT, which prohibits all nuclear test explosions in all environments.

Unfortunately, the U.S. Senate's brief and highly-partisan rejection of the CTBT in October 1999, coupled with the George W. Bush administration's opposition to the Treaty, have delayed ratification by the United States and several of the other nine states that must ratify before the treaty formally enters into force. Consequently, nearly a dozen years after the CTBT was opened for signature, the goal of CTBT entry into force remains unfulfilled, and U.S. test ban policy remains in an unhelpful state of limbo.

Since taking office in 2001, the Bush administration has not conducted a formal policy review of the CTBT, nor has it thoroughly considered the 2001 report of President Clinton's special advisor on the CTBT Gen. John Shalikashvili. Nevertheless, senior Bush administration officials have maintained the position taken by candidate George W. Bush in 1999: that the CTBT is neither verifiable nor compatible with indefinitely maintaining the existing U.S. stockpile.

¹ The Arms Control Association (ACA) is a non-partisan, non-profit organization established in 1971 to promote public understanding of arms control issues and to advocate effective nuclear, biological, chemical, and conventional arms control solutions. ACA publishes the monthly journal, *Arms Control Today*. Daryl G. Kimball has served as ACA's executive director since 2001. He previously served as security programs director for Physicians for Social Responsibility (1989-1997) where he helped lobby for the U.S. nuclear test moratorium legislation of 1992 and negotiation of a zero-yield CTBT. Kimball was executive director of the Coalition to Reduce Nuclear Dangers (1997-2001) where he led a group of NGOs in their efforts to win support for U.S. CTBT ratification.

At the same time, there is no military requirement for new warheads that would necessitate renewed U.S. testing, the U.S. stockpile stewardship program is working, and there is no other need for the resumption of nuclear testing in the foreseeable future. The Bush administration policy has been to continue the United States' voluntary nuclear test moratorium initiated in 1992 and but oppose ratification and entry into force of the CTBT.

The situation is self-defeating and counterproductive. The current U.S. approach requires the United States to assume most CTBT-related responsibilities but robs U.S. diplomats of the moral and political authority to prod other nations to join the treaty, refrain from testing, and help strengthen confidence in the beleaguered global nuclear nonproliferation system.

In response to U.S. CTBT policy, key states that have signed the CTBT, such as China and Israel, have delayed their ratification processes. Other states including India and Pakistan have yet to sign the treaty and it is highly unlikely they will do so unless the United States, China, and perhaps other hold-out states finally ratify.

But as 2008 presidential hopeful Sen. John McCain (R-Ariz.) noted back in 1999, the Senate can and should reconsider the CTBT. Senator Pete Domenici (R-N.M.) noted in a press release immediately following the vote: "Treaties never die, even when defeated and returned to the Executive Calendar of the Senate. Therefore, we will have another chance to debate the CTBT." And as Senators Chuck Hagel (R-Neb.) and Joseph Lieberman (I-Conn.) wrote in *The New York Times* in late-1999: "A clear majority of the Senate have not given up hope of finding common ground in our quest for a sound and secure ban on nuclear testing."

What Went Wrong in 1999

The next U.S. president must make prompt U.S. CTBT ratification a high priority but in order to do so, he must avoid making the errors that undermined the Clinton administration's effort to win the Senate's advice and consent before it even started. While the Senate's October 1999 rejection of the treaty was a shock to many in the United States and around the globe, a closer examination of the run-up to the vote makes it clear that circumstances were not conducive for success.

As I wrote shortly after the vote in the December 1999 issue of *Arms Control Today*:

"The "no" vote was the consequence of the political miscalculations of treaty proponents; the failure of many senators to understand core issues; the deep, partisan divisions in the nation's capital; and the president's failure to organize a strong, focused and sustained campaign for what he called 'the longest-sought, hardest-fought prize in nuclear arms control.'" (See: <http://www.armscontrol.org/act/1999_12/dkde99.asp> for full article.)

For two years after the CTBT was transmitted to the Senate, the Republican-led Senate Foreign Relations Committee stymied all debate on the treaty. But then, in September 1999, the Republican Senate leadership agreed to a short debate and a vote on the CTBT. Against the advice of the nongovernmental CTBT-proponents who argued for a thorough and extensive review of the treaty, Democratic Senate leaders agreed.

Not surprisingly, on October 13, the Senate fell short of providing the 67 votes necessary for ratification and it rejected the treaty by a vote of 51-48. Without the benefit of a months-long, high profile White House campaign in favor of the CTBT, treaty proponents were unable to effectively counter the outdated arguments against the treaty and a few new questions and

falsehoods that treaty opponents presented.

The result was that many senators who voted "no" based their judgments on erroneous assumptions and distorted representations of the role and purpose of nuclear weapons test explosions; what constitutes an effective stockpile stewardship program; and whether other states can gain militarily significant advantages relative to the United States under the CTBT regime. As Senator John Warner (R-Va.), the former Chairman of the Senate Armed Services Committee noted shortly after the vote, "much of the confusion [about the treaty] is based on misconceptions and wrong information."

In November 1999, the Clinton administration informed other governments that it would continue to abide by the CTBT and would continue to work toward its ratification. Today the CTBT remains on the executive calendar of the Senate Foreign Relations Committee.

Creating the Conditions Necessary for Senate Approval of the CTBT

Turning the vision of U.S. ratification into a reality will require hard work and some luck. Several potentially damaging blows to the prospects for U.S. ratification have been averted in the past several years. The U.S. test moratorium is still in place and enjoys bipartisan support. The United States still does as a matter of policy support the completion of the International Monitoring System, even if the United States is still millions of dollars short of meeting its funding commitments to the treaty organization. New nuclear weapons design concepts that might require nuclear proof testing have been blocked by Congress. The Bush White House also rejected suggestions from some CTBT critics inside and outside government in 2002 that the United States should repudiate Clinton's 1996 signature on the treaty.

Moving forward and gaining the necessary 67 Senate votes in support of ratification will be a difficult – but attainable – task requiring favorable political conditions and a well-executed ratification campaign. Based on the history of other U.S. treaty ratification campaigns and the failed CTBT effort from 1997 through 1999, these include but are not limited to:

1. Strong Presidential support and active leadership;
2. Bipartisan support for the treaty inside and outside the Senate;
3. Presentation of a powerful technical case to overcome skepticism about;
 - the value of the CTBT to meeting U.S. nuclear nonproliferation objectives,
 - the verifiability of the treaty, and
 - the ability of the United States to maintain its remaining stockpile of nuclear weapons without testing
4. Refraining from the development of new nuclear warheads that undermine the CTBT and/or that might necessitate nuclear testing in the future;
5. Continued support among a majority of the American public for the CTBT;
6. Continued support for the CTBT from allies and key ratifications by other states;
7. The time necessary to properly frame the treaty debate, educate new Senators and their staff, and fully address counterarguments.

Today, of course, these conditions do not all exist but the prospects and pressure for U.S. action on the CTBT are growing.

A growing array of Republican and Democratic national security opinion-leaders recognize the value of the CTBT and are calling for its reconsideration. Former republican Secretaries of State George Shultz and Henry Kissinger, along with Democrats including former Secretary of Defense Bill Perry, former Senator Sam Nunn, have written that the Senate should initiate a bipartisan process “to achieve ratification of the Comprehensive Test Ban Treaty, taking advantage of recent technical advances, and working to secure ratification by other key states.”²

The presumptive Republican and Democratic nominees for the presidency have, to varying degrees, expressed their support for reconsideration of the CTBT. On May 27, 2008, the presumptive Republican nominee, Senator John McCain, delivered a speech on “nuclear security” in which he said:

“As president I will pledge to continue America’s current moratorium on testing, but also begin a dialogue with our allies, and with the U.S. Senate, to identify ways we can move forward to limit testing in a verifiable manner that does not undermine the security or viability of our nuclear deterrent. This would include taking another look at the Comprehensive Test Ban Treaty to see what can be done to overcome the shortcomings that prevented it from entering into force. I opposed that treaty in 1999, but said at the time I would keep an open mind about future developments.”

Whether McCain is interested in some new initiative to “limit testing in a verifiable manner” or will eventually find a way to endorse the CTBT itself is not clear at this point. It is important to note, however, that given the widespread support for the CTBT among U.S. allies and most of the world’s other nations, anything short of U.S. support of a comprehensive test ban under the terms of the 1996 treaty would very likely be met with disappointment if not scorn. A proposal to ban nuclear test explosions above a certain explosive yield (a.k.a. a “threshold” test ban), for instance, would be of little or no nonproliferation value and would pose its own unique verification challenges.

The presumptive Democratic nominee for president, Senator Barack Obama (Ill.), is on record in support of U.S. ratification of the CTBT. He responded “yes” to an August 2007 survey question put to each of the presidential candidates by the Council for a Livable World that asked: “Would you make a Comprehensive Nuclear Test Ban Treaty a priority of your first term in office?” (See http://www.clw.org/media/emails/presidential_candidates_respond_to_questions/ for the full results of survey.)

In his response to that question, Obama also said: “As president, I will make it my priority to build bipartisan consensus behind ratification of the CTBT. In the meantime, the least we can do is fully pay our contribution to the CTBTO.”

In July 2007, Obama and Hagel introduced a comprehensive nuclear weapons and nonproliferation policy bill – S. 1977 – which includes a call for “continuing the United States moratorium on nuclear test explosions, initiating a bipartisan process to achieve ratification of the Comprehensive Test Ban Treaty, working to secure ratification by other countries, and fully

² “Toward a nuclear weapons free world,” George Shultz, Henry Kissinger, William Perry, and Sam Nunn, *The Wall Street Journal*, Jan. 4, 2007.

supporting United States commitments to fund the international monitoring system to help detect and deter possible nuclear explosions by other countries.”

Whoever wins can at least be expected to take a fresh and early look at the CTBT – and perhaps do much more.

Implementing a Bipartisan Process to Achieve Ratification

Translating pro-CTBT statements into winning over skeptical Senators and amassing a two-thirds majority in favor of ratification will take strong leadership and the commitment of significant political capital.

One factor working in favor of a successful second CTBT ratification campaign is the fact that the current and future U.S. Senate is somewhat different from the one that rejected the CTBT in 1999. Presently, there are 36 senators—equally divided between the two political parties—that have been elected since 1999. Several senators who voted “no” in 1999 have recently announced their retirement after 2008 and one or two of them might be replaced by pro-CTBT Democrats. The number of new Senators is significant because it means that many who voted against the CTBT are no longer in office.

Nevertheless, given Bush’s opposition to the CTBT and the lack of a careful Senate review of the treaty since 1999, many Senators will need to be briefed on the issue and their questions and concerns addressed thoroughly, respectfully, and consistently.

In contrast with the Clinton administration’s earlier effort, a new U.S. president fully committed to the CTBT should consider appointing a special, senior CTBT coordinator, backed with substantial interagency support and resources, who is solely focused on winning necessary support in the Senate. The president and the special coordinator will need to devote considerable time and attention with senators, as well as gather support for the treaty from Republican and Democratic foreign policy heavyweights. The administration will have to map out a step-by-step process for laying out the case for why the treaty is in U.S. national security interests through public speeches, expert reports, and hearings on Capitol Hill. One step that could help facilitate this process would be to commission an update of the authoritative 2002 National Academy of Sciences report on technical issues relating to the CTBT.

An administration seeking Senate support for the CTBT will likely find it necessary at some point to offer or consider understandings and/or conditions that help address the concerns of some senators who might not otherwise support the CTBT. Conditions that contradict the definitions and requirements of the Treaty or that undermine support for the CTBT by other states should be avoided. Under no circumstances should such end-game bargaining be initiated early in the process of winning the Senate’s support.

Most importantly, a well-prepared ratification effort will have to focus on delivering more persuasive answers on three key sets of questions that were at the center of the 1999 debate. While the evidence in favor of the CTBT has only grown, many old misperceptions persist.

1. Is the combined national technical means and international monitoring system adequate enough to detect and deter CTBT violations? The short answer is: yes.

To address lingering concerns, however, CTBT proponents must document how and why the international monitoring system, on-site inspections, and transparency measures provided for

under the CTBT, combined with U.S. intelligence capabilities, are adequate to detect and deter militarily significant cheating. As the 2002 National Academy of Sciences report stated:

“The capabilities to detect and identify nuclear explosions without special efforts at evasion are considerably better than the “one kiloton worldwide” characterization that has often been stated for the IMS. If deemed necessary, these capabilities could be further improved by increasing the number of stations in networks whose data streams are continuously searched for signals.

Underground explosions can be reliably detected and can be identified as explosions, using IMS data, down to a yield of 0.1 kt (100 tons) in hard rock if conducted anywhere in Europe, Asia, North Africa, and North America. In some locations of interest such as Novaya Zemlya, this capability extends down to 0.01 kt (10 tons) or less.”

In addition, the United States benefits from monitoring capabilities that are currently only available through the CTBT’s IMS, including monitoring stations in Russia, China, and other sensitive locations that the United States would otherwise not be able to access.

Since the 1999 Senate vote and the 2002 National Academy of Sciences report, the International Monitoring System has only grown in size and sophistication. For example, more than 10 of the IMS primary seismic stations detected the ground tremors produced by the relatively small yield, Oct. 9, 2006 North Korean underground nuclear test explosion near P’unggye, according to the January 2007 newsletter of the CTBTO, *Spectrum*. The North Korean test blast was estimated by various national, international, and scientific monitors to be less than 1 kiloton (TNT equivalent) in yield.

More significantly, one of 10 experimental “noble gas” monitoring stations that are to be part of the IMS detected trace amounts of unique radioactive material that confirmed the explosion was nuclear. The station, which is located near Yellowknife in Canada’s Northwest Territories, detected two spikes in xenon gas readings, on Oct. 22 and 25, which, on the basis of atmospheric modeling, were consistent with the North Korean test, according to diplomats from two countries who are familiar with the data. On Oct. 11, 2006, U.S. national monitoring assets also detected “radioactive debris” that indicated the explosion was nuclear, according to a statement from the office of the U.S. Director of National Intelligence.

When the combination of existing national means of intelligence, as well as world’s network of tens of thousands of civilian seismic monitoring stations, plus the option of on-site inspections are taken into account, no would-be cheater could conduct a nuclear weapon test explosion in underground, underwater, or in the atmosphere without a very high risk of detection.

2. Can the United States continue to rely on its stockpile stewardship program to maintain its arsenal under a permanent CTBT? Yes. As the U.S. National Academy of Sciences reported in July 2002, the United States “has the technical capabilities to maintain confidence in the safety and reliability of its existing nuclear-weapon stockpile under [a test ban], provided that adequate resources are made available to the Department of Energy’s nuclear-weapons complex and are properly focused on this task.”

Though the Energy Department has determined each year for the last decade that the U.S. nuclear arsenal remains safe and reliable without nuclear testing, some claim—as they did in 1999—that as time goes on there may be age-related problems in the nuclear stockpile.

The good news is that all of the technical evidence available shows that such concerns are greatly overstated. New government studies on plutonium longevity completed in 2006 have found that the plutonium primaries of most U.S. nuclear weapons have a minimum lifetime of 85 years, which is twice as long as previous estimates.

According to the National Academy panel, which included three former lab directors, age-related defects mainly related to non-nuclear components can be expected, but nuclear test explosions "are not needed to discover these problems and is not likely to be needed to address them."

Rather, the panel says, the key to the stewardship of the arsenal is a rigorous stockpile surveillance program, the ability to remanufacture nuclear components to original specifications, minimizing changes to existing warheads, and non-explosive testing and repair of non-nuclear components. Leading independent experts, including Richard Garwin and Sidney Drell, have recently testified that they believe confidence in existing warheads has increased over time.

In March 2007, Thomas D'Agostino, then acting National Nuclear Security Administration (NNSA) administrator, said, "stockpile stewardship is working. This program has proven its ability to successfully sustain the safety, security and reliability of the stockpile without the need to conduct an underground test for well over a decade."³

Nevertheless, the Bush administration has initiated a new and poorly defined program to design and build new warheads to "replace" certain warhead types already in the arsenal. A chief selling point for the so-called Reliable Replacement Warhead (RRW) program is unsubstantiated assertion that the current approach to stockpile stewardship is unsustainable and unreliable and that RRW will reduce the likelihood that the United States will need to resume testing. The Department of Energy said in 2005 that the goal of the RRW program is to produce a small quantity of new replacement warheads by 2012-2015 for the W-76 warhead.

The W-76 was originally designed to minimize size and weight and maximize the explosive yield. According to a small minority of U.S. nuclear weapons scientists, this might make its nuclear components more sensitive to aging effects. In theory, the RRW is supposed to increase design margins (by using more fissile material) to maximize reliability.

But rather than build new replacement warheads at great cost, the United States could increase confidence in certain warheads by adding more boost gas to increase the explosive energy of the primary stage of the weapon well above the minimum needed to ignite the secondary or main stage.

NNSA officials also argue they can build replacement warheads without nuclear explosive proof testing. However, a recent report by an independent group of nuclear weapons scientists known as JASON found that it is by no means certain that the proposed RRW design can be validated as "reliable."⁴ While many legislators have their doubts, some believe that if the new warheads are indeed more reliable, then test ban skeptics in the Senate should be more willing to support CTBT ratification.

³ Testimony of Thomas D'Agostino, acting administrator of the National Nuclear Security Administration before the House Appropriations Subcommittee on Energy and Water Development hearing on the Department of Energy's FY2008 budget, March 29, 2007.

⁴ "Reliable Replacement Warhead: Executive Summary," JSR-07-336E, by JASON, The MITRE Corporation, Sept. 7, 2007.

It is doubtful that new warheads would be enough to convince the skeptics and may be more risky for the CTBT. Given that the new replacement warheads are years and billions of dollars away from reality, many CTBT skeptics might argue, as they did in 1999, that it is too early to tell whether the new warheads will work reliably and without proof testing. Furthermore, if Congress once again acts to cut or eliminate the Bush administration's request for funding the RRW program (which is highly likely), RRW may be a non-factor in any future discussion about the CTBT.

It is also important to consider the fact that building a new generation of nuclear weapons to win support for a global test ban is contrary to the spirit of the CTBT, a chief aim of which is to end qualitative nuclear arms competition.

3. Is the Treaty Vital to Meeting Nonproliferation Objectives? Yes, this is as true today as it ever has been. The chief impact of the CTBT is that it limits the nuclear-weapons development capabilities of all nuclear-weapon states and it would eliminate the temptation of other states to react to the testing of others with testing and/or deployments of their own.

For instance, in the absence of a permanent CTBT:

- China and Russia might test in order to make certain refinements in their nuclear arsenals. With further nuclear testing China might be able to reduce the size and weight of its nuclear warheads, which would make it easier for China to expand and add multiple independently targetable re-entry vehicles (MIRV) to its strategic arsenal if it wanted to do so. This could dramatically increase the number of nuclear warheads China could deliver; and
- India and Pakistan could use further testing to perfect boosted fission weapons and thermonuclear weapons, greatly increasing the destructive power of their arsenals.

The CTBT is, of course, also an essential step toward restoring confidence in the beleaguered nuclear Nonproliferation Treaty (NPT) regime. The nuclear-weapon states' commitment to achieve the CTBT was a crucial part of the bargain that won the indefinite extension of the NPT in 1995 and was part of the 2000 NPT Review Conference final document.

The CTBT can also help head-off and deescalate destabilizing nuclear arms competition. With no shortage of conflict and hostility in the Middle East, ratification by Israel, Egypt, and Iran would reduce nuclear weapons-related security concerns and bring those states further into the nuclear nonproliferation mainstream. Action by Israel to ratify could put pressure on other states in the regions to do so. Iranian ratification would help address profound and legitimate concerns that its nuclear program is intended to develop and deploy nuclear weapons. The Pakistan-India nuclear arms race could be contained to the benefit of both countries if they signed and ratified the CTBT.

The Role of Other States in Strengthening the CTBT Norm

The numerous statements by individual governments, the EU, the Non-Aligned Movement, the Organization of American States, and the biennial Article XIV CTBT Entry Into Force Conference in favor of the CTBT are essential to the maintenance of the test ban norm and pressure on the United States and other hold-out states to sign and/or ratify the treaty.

While important, such statements are not sufficient. Unfortunately, top leaders of states

committed to the CTBT often fail to press their counterparts in the 9 CTBT hold-out states to reconsider their opposition to the treaty or move forward with ratification. If they are truly committed to the treaty, CTBT ratifying states must exercise much more consistent, top-level diplomacy in support of CTBT entry into force.

The next important opportunity for friends of the CTBT to show their support will come this September in New York on the eve of the UN General Assembly meeting when foreign ministers from CTBT ratifying states will gather to issue their biennial joint statement calling upon remaining states to sign and/or ratify the CTBT.

Another important opportunity is the next Article XIV Conference on Facilitating Entry Into Force, which could be scheduled as early as September 2009 in New York. The timing and location of this meeting would help focus the attention of the next U.S. presidential administration on the treaty, and give the new U.S. president the opportunity to announce his commitment to secure Senate advice and consent for ratification at the earliest possible date.

Conclusion

U.S. ratification of the CTBT is possible, necessary, and long-overdue. With the 2008 U.S. election approaching, it is vital that CTBT supporters put the treaty back on the U.S. political map, avoid developments that would damage the CTBT regime, and move to secure ratification by other key states before the next opportunity to secure U.S. ratification slips away.