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The Comprehensive Test Ban Treaty, In Perspective

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The international commitment to end nuclear testing has been enshrined in the Nuclear Non-Proliferation Treaty, NPT, since its conclusion in 1968. The most important treaty for international peace and security that exists, the NPT, was built on a basic bargain. The overwhelming majority of countries in the world agreed to join the NPT as non-nuclear weapon states, not to acquire nuclear weapons and to allow inspections of their nuclear facilities. In return, the five states that possessed nuclear weapons at the time of Treaty signing in 1968 were allowed to join the NPT as recognized nuclear weapon states, but in return for the commitment to world-wide non-proliferation, they pledged to negotiate the elimination of their nuclear arsenals and promised to support the sharing of peaceful nuclear technology with all Parties in good standing under the Treaty.

The NPT had been negotiated pursuant to a 1965 Resolution of the United Nations General Assembly which called for the negotiation of an international treaty to prevent the proliferation of nuclear weapons based on five principles, one of which was "the treaty should embody an acceptable balance of mutual responsibilities and obligations of the nuclear and non-nuclear powers."

It was recognized at the time of the signing of the NPT that the total elimination of all nuclear weapon arsenals was likely to be far in the future. But the NPT was a

strategic bargain; it was not a gift from the non-nuclear weapon states. Thus it was understood that interim measures were to be negotiated to include: a permanent ban on all nuclear explosive tests, a treaty halting the further production of fissile material, deep reductions worldwide in nuclear weapons and legally binding negative security assurances. But the most important element of this was, and is, a commitment to ban all nuclear explosive tests. Thus, if the prospective non-nuclear weapon states were going to give up possession of the ultimate weapon, at least the nuclear weapon states could stop testing the weapon.

As a result, from the earliest of the days of the NPT regime the non-nuclear weapon states saw the test ban as the litmus test of nuclear weapon state compliance with the basic bargain of the treaty. The test ban is the only disarmament measure explicitly mentioned in the treaty. The discontinuance of nuclear weapon tests is called for in preambular paragraph 10 of the NPT. Without the Comprehensive Test Ban Treaty, the CTBT, the NPT is not seen by most of the world as a treaty of balanced obligations as called for in 1965. A one-sided NPT will not survive forever.

This viewpoint continued to be strongly influential. The 1980 and 1990 NPT Review Conferences ended in stalemate, because of failures to achieve a CTBT and this difference was papered over at the 1975 and 1985 Review Conferences. The United States at last declared in 1993 that it was committed to achieving a CTBT and most of the world was persuaded that this commitment to the CTBT was real, as was the United States' intention to pursue its other NPT nuclear disarmament obligations. It was on this basis, as reflected in the 1995 Principles and Objectives on non-proliferation which made the achievement of a CTBT number one priority, that an overwhelming majority of the

NPT Parties, at the 1995 Review and Extension Conference supported making the NPT permanent, a great step forward for U.S. interests and for world security. The long failure of the United States to ratify the CTBT is a serious breach of faith with this decision, greatly undermining the viability of the NPT.

In the fall of 1992, the Congress passed the Exxon-Mitchell-Hatfield legislation which called upon the United States to pursue a CTBT and which provided for an immediate nine-month testing moratorium. After the expiration of the moratorium, in the summer of 1993, if the government so chose, it could conduct five tests per year for three years (a total of fifteen) for strictly limited purposes. Three tests per year were to be for the testing of new safety devices for nuclear weapons, one test per year could be for reliability and the other for Great Britain (which had for years been conducting its nuclear testing program at the Nevada Test Site). President Bush, somewhat reluctantly, signed the legislation in October. The Soviet Union instituted a testing moratorium in 1990 which was continued by the Russian Federation and subsequently President Mitterrand of France—apparently to the surprise of his military—announced a French testing moratorium. China had not tested in several years but their plans remained murky.

The passage of this legislation had the effect of forcing the Clinton administration to make some key decisions in the spring of 1993. One issue was that the U.S. military had no interest in purchasing the safety devices that would be tested, the cost of which would have been around \$6 billion, and one of the safety devices was for weapons allocated to bombers that were no longer on alert. Reliability testing was not something that had been done very often historically and a test program driven entirely for British weapon testing would not have been acceptable to the three nuclear weapon laboratories

or the Congress. Another problem was that the U.S. was already looking ahead to the NPT Review and Extension Conference in 1995 at which it was hoped that the NPT could be made permanent against expected very strong opposition from the majority of non-nuclear weapon NPT Parties. If the U.S. (and the British) resumed testing, likely the Russians and the French would have followed suit, and it probably would have been impossible to achieve a permanent NPT in 1995 in the face of active nuclear weapon test programs being conducted by all five NPT nuclear weapon states. As it turned out the Chinese resumed sporadic nuclear weapon testing the late summer of 1993 and ended them prior to CTBT signatures in 1996. The new French President Jacques Chirac in June of 1995, one month after permanent extension of the NPT, announced the resumption of French testing with a planned program of eight tests. This provoked an unknown enormous storm of world wide protest, especially from Australia, New Zealand and Japan (Japan threatened to terminate all trade with France). The result was that two months later, in August, France declared support of a zero yield CTBT and the reduction of their test program to six tests, after which the test site would be permanently closed.

Thus after a long and intense internal debate in the United States, on July 3, 1993, President Clinton announced the continuation of the moratorium until September, 1994 and renewable each year thereafter until a CTBT is achieved. Originally the continuation of the moratorium was continued on the condition that no other nation tested. This condition was removed by the NSC Principals in late August, 1993 in the face of an imminent Chinese test on the ground that no nuclear weapon testing was now settled U.S. policy. This policy was confirmed to the world community that fall at the United Nations and it was on this basis that the NPT was made permanent, indefinitely extended in 1995.

The CTBT negotiations began in Geneva at the Conference on Disarmament, the CD, in 1994. Initially the U.S. position on the yield level, or scope, of the Treaty was that the test ban should still permit hydronuclear tests which could result in up to a two-to-four pound nuclear yield. This was the position that the U.S. had taken during its 1958-61 moratorium. However, by the spring of 1995 it was clear that this position was not going to prevail. The Russians said that this was too low for them; they needed ten tons if there was to be any threshold. This French said 300 tons, and the majority of NPT Parties all non-nuclear weapon states, insisted on no threshold, a zero yield CTBT.

In the summer of 1995 (after the NPT Review and Extension Congress) a statement by Secretary Perry at a press conference in Washington indicated that the U.S. was considering a CTBT threshold of "a few pounds to even several hundred tons," other unnamed Pentagon voices quoted in the press proposed 300 tons. This provoked a vigorous internal U.S. government debate, as a number of countries that had provided important support in achieving a permanent NPT sent in protests that such a U.S. position would be a betrayal. In the end the White House announced on August 9, 1995 that the U.S. would support a zero yield CTBT, the only negotiable option, along with a comprehensive Stockpile Stewardship Program and an annual certification requirement that the stockpile is safe and reliable.

As said, the very next day, France announced its support of a zero-yield CTBT. Russia complained that they had not been given advance notice of this U.S. decision but came on board not long thereafter. Britain was bound by the U.S. decision given their use of the Nevada test site and China adopted this position a little later. It is important to understand that this position did not exclude so-called hydrodynamic or subcritical tests

which do not involve any nuclear yield resulting from the test. The U.S. during the negotiations made this clear and conducted such tests before and after CTBT signature without any significant international protest. Indeed a U.S. Department of Energy press release on October 27, 1995, announced the commencement of subcritical tests in Nevada.

To remove any doubt that this was intended as a true zero yield CTBT, the relevant language expressing the ban on nuclear weapon tests, pursuant to an Australian proposal, was drawn from that of the Limited Test Ban Treaty of 1963 (LTBT), which is a zero yield ban on nuclear weapon test everywhere except underground and the scope of which has never been questioned. In addition, President Clinton's statement of August 9, 1995 is unequivocal. In the negotiations the other NPT nuclear weapon states placed their positions on the record: following up on President Yeltsin's statement at a press conference in Moscow in April, 1996, that "all, to the very last one, agreed that this year we've got to sign the Treaty on banning . . . any size of test forever," Russian Ambassador Grigory Berdennikov said in May at the CD "the Russian delegation has always argued that this treaty should contain no threshold restrictions whatever"; Ambassador Gerard Errera of France formally informed the CD in Geneva on August 10, 1995 that France "envisaged a truly comprehensive prohibition" and would endorse the Australian proposal to use the LTBT text to express the ban. This would prohibit "any nuclear weapon test or any other nuclear explosion." The French Foreign Ministry the day before had explicitly said that France supported the Australian proposal and "zero"; the British Ambassador, Sir Michael Weston, following suit stated in Geneva that having carefully studied the statements by Clinton and Errera he wanted now "to put on record my

government's position that the CTBT should not permit any nuclear weapon test explosion involving any release of nuclear energy, no matter how small." Finally on March 28, 1996, China's ambassador in Geneva, Sha Zukang, in a formal plenary statement reminded everyone that China had consistently advocated that the CTBT scope should exclude any threshold and "welcoming" that other states had come to this position. Thus, there is no lack of clarity on scope among the NPT nuclear weapons states.

Verification was of course a major issue during the negotiations, as it was during the failed Senate consideration of the CTBT in 1999. It is less of an issue now due to the development of the International Monitoring System, the IMS, by the CTBT organization in Vienna.

There were many contentious issues during the CTBT negotiations that involved verification. Consistent themes included the purpose of the cost of verification as well as the confidentiality of non-CTBT activities. For some countries, a robust and capable verification regime was desired both to inhibit and to detect potential cheating to verify the CTBT as well as to serve as a supplement to the NPT regime. Ultimately, based on political cost, and practical considerations, the CD agreed to include four basic technologies (seismic, hydroacoustic, infrasound and ground-based radionuclide sensors) for remote monitoring. There was also included an on-site inspection regime with a cumbersome triggering arrangement—primarily to address Chinese sensitivities—but in a new departure the process could be informed by national technical means intelligence provided by Parties. But it is remote monitoring that is and will be the mainstay of the CTBT verification regime. It was agreed that there would be 321 IMS sensors in roughly 250 locations in about 90 countries. This would include 50 primary seismic sensors

(continuously operating) and 120 auxiliary sensors (intermittent /on demand) to detect shock waves through the earth; six hydro sensors underwater and five T-phase sensors on islands to detect shock waves through the oceans; 60 infrasound sensors to detect shock waves in the atmosphere; and 80 radionuclide sensors to collect particulate samples carried by prevailing winds. As of July, 2009, 240 of the now 337 IMS facilities were certified (73%), 28 were being tested but not yet certified, 29 are under construction and 33 are in the planning stage. Thus, over 90% of IMS facilities are certified, operational, or under construction and their capability (which is continually improving) far exceeds the one kiloton detection level believed in the negotiations to be sufficient to deter cheating. For example, the detection capability for Novaya Zemla is presently down to .01 kilotons or ten tons. The .6 North Korean test explosion on October 9, 2006 was detected by 31 stations in Australia, Europe, North America and Asia. The four-ton blast that destroyed the Kursk submarine was recorded by 20 seismic stations.

The issue that drew emotional controversy up to the very end of the CTBT negotiations was which countries would be required to sign and ratify the Treaty for it to enter into force. The ratification of the five NPT nuclear weapon states was a requirement of course. Many countries, including the five weapon states, also considered a CTBT valueless unless the three "threshold" states (India, Pakistan and Israel) are also Parties. After much debate it was decided that it would be unwise to single out these eight unless they were part of a larger list. India objected to the entire process. The treaty drafters created a list of 44 countries, based on International Atomic Energy lists, which have nuclear research and/or power reactors, are members of the CD, and were participants in the CTBT negotiations in June, 1996. Thus, the Treaty provides in Article XIV that all 44

countries on this list must become Parties for it to enter into force. Great Britain, France, Russia and Japan among many others have now ratified. Only nine of the 44 remain: the United States, Indonesia, Egypt, Israel, Iran, India, Pakistan, North Korea, and China. The Congressional Commission America's Strategic Posture in its Final Report correctly notes on page 85 that "U. S. ratification alone is unlikely to bring entry into force" and calls for a "credible diplomatic strategy" to achieve entry into force to employ should the United States ratify. The Report also refers on page 87 to an "expected long delay in the actual entry into force of the treaty" should the Senate consent to CTBT ratification. This need not be so. China, Israel, and Indonesia have made it abundantly clear that they will ratify after the U.S. does. Egypt has been a supporter of the test ban for a long time and will ratify after Israel does. India had indicated after its tests in 1998 that it would consider CTBT ratification, but was let off the hook by the U.S. Senate rejection in 1999. Relations with India are better now and both India and Pakistan have been observing moratoria since 1998. If India ratifies, Pakistan surely would.

That leaves Iran and North Korea. Who can say anything certain about the Islamic Republic under current conditions? But Iran did not vote against the CTBT at the United Nations in September, 1996 and to be one of the two states not to ratify would give the complete lie to the claim that their nuclear program is peaceful. As for North Korea, surely diplomacy can somehow find a way.

It is in the United States security interest to ratify the CTBT. The United States will be secure under the CTBT and the Treaty will help to inhibit new or enhanced nuclear threats from emerging. U.S. ratification of the CTBT will help restore U.S. global leadership and strengthen international support for the NPT, the bedrock of all

efforts to stop the spread of nuclear weapons. The security of the United States would be enhanced by the ratification of the Comprehensive Test Ban Treaty.