

COMPREHENSIVE NUCLEAR TEST BAN TREATY

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More than sixty years ago, the beautiful city of Hiroshima, Japan, was devastated by the explosion of an atomic bomb. The bomb released the explosive equivalent of 12,500 tons of Trinitrotoluene (TNT) and killed, outright, or over time by radiation poisoning, nearly 75 per cent of the population of that city. Three days later similar devastation was brought to the city of Nagasaki, Japan, and a few days after that the Second World War, the bloodiest and most destructive in the history of humanity, came to an end.

Many thought then, and in subsequent years, that the attacks on Hiroshima and Nagasaki were the harbingers of the future and that nuclear weapons were destined to spread around the world and be part of future wars, threatening the survival of humanity. These views were reinforced by the commencement in a few years of a vast nuclear arms race with both the United States and the Soviet Union rapidly developing the capability to destroy the earth many times over.

President John F. Kennedy was one of those who feared that nuclear weapons would inherit the earth. There were predictions during his Administration that, by the end of the 1970s there could be 15 to 20 nuclear weapon States in the world, with nuclear weapons fully integrated into their national arsenals. If this had happened, likely there would be twice or more than that many today. In 2004, for example, the Director-General of the International Atomic Energy Agency, Mohamed ElBaradei, asserted that there were more than 40 States in the world that currently could build nuclear weapons if they so chose. Such a development would have placed the world community in a situation where every conflict would have run the risk of going nuclear and it would have been very difficult to keep nuclear weapons out of the hands of terrorist organizations, they would have been so widespread. Such an international security situation would have been created as to make today's time of troubles seem like paradise by comparison.

But such nuclear weapon proliferation did not happen; President Kennedy's darkest fears were not realized. The principal reason that this did not happen was the entry into force of the Nuclear Nonproliferation Treaty (NPT) in 1970 along with the related extended deterrence policies of the United States and the Soviet Union during the Cold War.

The NPT essentially drew the line where the world was in 1970; it recognized five existing nuclear weapon States: the United States, the United Kingdom, France, the Soviet Union (Russian Federation) and China and provided that the rest of the world would agree not to acquire nuclear weapons. And most of the world did agree to that. There are 183 NPT non-nuclear weapon States at present (April 2009). But the NPT did not come as a free gift to the five nuclear weapon States from the rest of the world; rather it is a strategic arrangement founded on a central bargain. That bargain was, and is, non-proliferation in exchange for the sharing of peaceful technology and nuclear disarmament. Nuclear disarmament was perceived by the non-nuclear States as the five nuclear weapon States over the long term agreeing to negotiate away their nuclear arsenals so that

ultimately all States would receive equal treatment under the NPT. Since it was recognized that this would take a very long time, the non-nuclear weapon States pressed the nuclear weapon States to agree to interim measures, first and foremost a comprehensive nuclear weapon test-ban treaty, a CTBT. The test ban was included in the preamble of the NPT. NPT Review Conferences several times over the years failed because of disagreement over this issue. The non-nuclear weapon States' view was, and again, is, that if we are going to give up nuclear weapons, at least the five nuclear weapon States could agree to stop testing their weapons.

And in fact the very first disarmament issue of the nuclear era that was discussed was the effort to halt nuclear explosive testing. As early as 1954, Indian Prime Minister Jawaharlal Nehru proposed a "standstill agreement" on nuclear testing. This disarmament effort began in earnest in 1955 just a year after an incident in which a United States thermonuclear device produced a much larger than expected yield and, as a result, Japanese fishermen aboard the fishing vessel Lucky Dragon were struck by fallout outside the area of the central Pacific cordoned off for testing by the United States Government. Fallout from a Soviet test fell on Japan the same year, and later concerns began to be expressed about the byproducts of nuclear explosions entering the food chain – most notably high levels of strontium 90 in milk. During the 1956 United States Presidential campaign, Democratic candidate Adlai Stevenson suggested a moratorium on nuclear testing. Stevenson's proposal was denounced during the campaign. In 1957, United States President Dwight D. Eisenhower proposed a two-year suspension of testing with an inspection system to ensure compliance with such an undertaking. The Soviet Union rejected the conditions and instead announced a unilateral moratorium on testing.

President Eisenhower responded to the Soviet moratorium by proposing a meeting of technical experts to discuss issues related to verifying a test ban. The Conference of Experts met in July and August 1958; it included scientists from the United States, the United Kingdom, France, Canada, the Soviet Union, Poland, Czechoslovakia and Romania. On August 21, the Conference issued a report indicating that adherence to a comprehensive test ban treaty could be verified with a network of some 160 to 170 land-based monitoring stations. The following day, President Eisenhower proposed a one-year testing moratorium, and in the fall trilateral test ban negotiations began among the United States, the Soviet Union and the United Kingdom. While progress was made on numerous issues in the negotiations, concerns about verification emerged.

In 1960, France conducted its first nuclear test in the Sahara Desert, and in 1961 the Soviet Union broke the moratorium begun in 1958 with the largest nuclear explosion of all times (approximately 58 megatons). The United States responded with a vigorous test series. In January 1962, the trilateral negotiations were indefinitely adjourned, and in April 1962 the United States resumed atmospheric testing.

Thereafter, there was a renewed effort to move toward a test ban, with verification and inspection issues remaining the principal stumbling blocks. The United States wanted on-site inspections and unmanned seismic stations on Soviet territory. The Soviets accepted both in principle, but the two sides could not agree on the numbers; at the closest point of the negotiation, the United States wanted the right to seven inspections per year and the Soviets would only agree to three. The same was true for remote sensors – the principle was agreed upon, the numbers were not.

In order to bypass the stalemate and at the same time address the environmental issues associated with atmospheric nuclear testing, President John F. Kennedy, in a June 1963 commencement address at the American University, proposed a treaty banning

nuclear tests in the atmosphere, under water and in outer space. The Limited Test Ban Treaty (LTBT), which was negotiated in ten days in July 1963 and entered into force in October 1963, resolved the most prominent environmental issues, but – except for the United States/Soviet Threshold Test Ban Treaty and Peaceful Nuclear Explosion Treaty in 1974 and 1976, respectively (which established a 150 kiloton limit on nuclear explosions) – it led to more than twenty-five years of inaction on a comprehensive test ban. Ironically, the LTBT eased much of the public pressure to end testing, and with underground tests still allowed, a considerable increase in the number of tests followed.

If the United States and the Soviet Union were inactive on the test ban, however, the rest of the world was not. In the late 1960s the NPT was negotiated based on the aforementioned central bargain. From the beginning, the non-nuclear weapon States viewed the CTBT as the litmus test in judging whether nuclear weapon States were upholding their end of the bargain. For twenty years after the NPT entered into force in 1970, as stated, most of the NPT Review Conferences – held every five years – essentially failed over the issue of the United States and Soviet commitment to completing a CTBT.

But then there began to be movement. In 1990 Soviet President Mikhail Gorbachev announced a Soviet nuclear test moratorium, which was continued by the Russian Federation after the collapse of the Soviet Union. President Francois Mitterand of France – apparently to the surprise of his military – announced a French moratorium in 1992. In the fall of that year the United States Congress passed the Hatfield-Mitchell-Exon legislation, which called upon the United States to pursue a CTBT and provided for the immediate commencement of a nine-month testing moratorium. The Hatfield-Mitchell-Exon legislation had the effect of forcing the Clinton Administration to make key decisions relating to a CTBT in the spring of 1993.

Accordingly, after a long struggle within the United States Government, on 3 July 1993, President Bill Clinton announced that, looking toward a CTBT, he was continuing the moratorium in the legislation until September 1994 (renewable each year thereafter until a CTBT was achieved). Negotiations began in early 1994 in the Conference on Disarmament, but for a long time progress was slow. Gradually a draft treaty began to take shape. Progress in this regard was significantly aided by a United States decision in January 1995 to extend its testing moratorium and drop its proposal for a right to withdraw from the treaty in ten years after its entry into force, and by an August 1995 decision to support a true zero-yield test ban.

In April/May 1995, the NPT parties came together for the long awaited Review and Extension Conference. In 1968, when the NPT was signed, most of the negotiating parties intended to give the NPT permanent status as was, and is, the custom with multilateral arms control treaties. However, three States objected; Sweden, Germany and Italy, who did not want to forswear nuclear weapons forever because they were uncertain as to whether the NPT would in fact be effective and because they were concerned about the commercial impact of its safeguard system. The compromise reached gave the NPT a twenty-five year life and then on a one-time basis, a decision by majority vote of the parties in a conference as to the length of the remaining life of the treaty – without reference to national legislatures. Thus, in 1995, to secure for the world community the permanent protection of the NPT, it was crucial to achieve a majority at the Conference for an indefinite NPT extension. After a great effort by many countries this was achieved (indeed the NPT was extended indefinitely by a consensus decision), but the principal political price paid for this landmark achievement was the agreement by all the parties to conclude a CTBT in one year – by the end of 1996.

In January 1996, CTBT talks in Geneva were again stalled, this time by an Indian proposal to include a provision in the treaty that the nuclear weapon States agree to a time-bound framework for nuclear disarmament and by a Chinese proposal to allow peaceful nuclear explosions (PNEs) for such things as civil engineering projects. While India's condition would not be included in the treaty, and India would later refuse to support the agreement, China dropped its demand that PNEs be allowed in June 1996.

For many years, indeed throughout the long history of negotiations toward a CTBT, verification of compliance had been a separate issue. Over time, a broad consensus, based on considerable work by scientific personnel, developed in Geneva on a technical basis as to the means required to provide effective verification for a CTBT. This included improvements to and expansion of the worldwide seismic network, as well as radionuclide, hydroacoustic, and infrasound monitoring. All these systems were agreed to be incorporated into a vast international monitoring system established under the treaty. The primary system would consist of 50 seismic stations worldwide to monitor underground events (earthquakes and explosions) and 120 auxiliary stations, 80 radionuclide laboratories to monitor radioactive particles associated with a nuclear explosion, 11 hydroacoustic stations to listen for explosions under water, and 60 infrasound stations to monitor sound waves in the atmosphere. The data produced by these facilities flow continuously into an international data center, which is part of the technical secretariat of the CTBT Organization (CTBTO), located in Vienna, Austria. The data are stored, analyzed, and disseminated as appropriate and will be used to address compliance concerns, including decisions on requests for on-site inspections. Importantly, the treaty provides for the right of the States parties to use national technical means (e.g., information from United States satellite monitoring – as well as potentially from other States) for verification, particularly to evaluate on-site inspection requests (which after a long negotiation it was agreed would be authorized by an affirmative vote by at least thirty of the fifty-one technical secretariat members).

One of the most significant challenges to completing the negotiations came in July 1996 in the form of a confrontation with India over article XIV, which establishes the conditions under which the CTBT would enter into force. Essentially, China and the Russian Federation, supported by the United Kingdom, took the position that the three threshold States (India, Pakistan and Israel), particularly India, had to be necessary parties for the CTBT to enter into force. Most notably, the Chinese made it very clear that they would not undertake a legal commitment to stop testing unless India did the same. Accordingly, to avoid singling out India, Pakistan and Israel in the final draft text, Ambassador Jaap Raamaker of the Netherlands, the 1996 Chair of the Conference on Disarmament ad hoc committee for the negotiations, fashioned an entry into force article that made all States that were members of the Conference on Disarmament and that had nuclear facilities on their territory (forty-four, including the Democratic People's Republic of Korea) necessary parties to entry into force of the CTBT. In addition there would be a conference on entry into force three years after the treaty was opened for signature – and as necessary every year thereafter – to discuss ways of facilitating entry into force. At Chinese insistence, the conference was to have no power to bring the CTBT into force or to make changes to the entry into force requirements, just to discuss how to do it.

By August 1996, most outstanding issues had been resolved (except India agreeing to article XIV). The Indians announced that they would break consensus and block the treaty from being sent to the United Nations to be opened for signature, as was the Conference on Disarmament practice. After several procedural steps, India did just that: it blocked the ad hoc committee from submitting its report to the Conference on

Disarmament plenary, and it blocked the forwarding of the completed draft treaty to the United Nations without the report. Clearly, it had become necessary to bypass the Conference on Disarmament and introduce the CTBT into the United Nations General Assembly in New York directly. The United States approached the traditional troika group (Mexico, New Zealand and Australia) that each year for some time had introduced a resolution in the General Assembly calling for a CTBT, to introduce a resolution approving the opening for signature of the attached draft of a CTBT (the Conference on Disarmament draft). Only Australia was willing to take the step introducing such a resolution. The resolution was introduced and after floor debate, it passed by a vote of 158 to 3: India, Bhutan and Iraq voted no and Cuba, Lebanon, Syria, Mauritius and Tanzania abstained.

The treaty was opened for signature on 24 September 1996. The United States was the first to sign, and eventually 179 other nations followed suit. As of April 2009, there were 148 ratifications, including the United Kingdom, France, the Russian Federation and Japan, but only thirty-five of the required forty-four had ratified. Several of the nine remaining States, such as China, Israel, and perhaps India, were waiting for the United States, but the United States Senate rejected ratification of the CTBT in October 1999 and the treaty still languishes in the Senate.

Article I of the CTBT sets forth its basic obligations. A party is not to carry out any nuclear test explosion or any other nuclear explosion, is to prohibit any such explosion at any place under its jurisdiction and control, and is to refrain from causing or participating in the carrying out of any other nuclear explosion. This language is based on the LTBT, but does not specify the four environments (i.e., atmosphere, outer space, under water and underground) set forth in the LTBT. To avoid argument over possible loopholes, the ban on nuclear explosives is universal. The phrase “any other nuclear explosion” is included to make it clear that the ban extends to so-called peaceful nuclear explosions, which explosions the Chinese advocated exempting during the negotiations and are similar to what the Soviets had advocated during the Threshold Test Ban Treaty negotiations of the 1970s.

Article II establishes the CTBTO to ensure the implementation of the treaty and to provide a forum for consultation and cooperation among States parties.

Article IV and the Verification Protocol establish the extensive verification regime to ensure compliance with the basic obligations as described above. The regime is designed to monitor seismic and other events and to detect nuclear explosions anywhere in the world in order to deter possible efforts to evade the ban on testing. The verification regime consists of the International Monitoring System, with global seismological, radionuclide, hydroacoustic, and infrasound sensor networks; on-site inspection, consultation and clarification provisions; and confidence-building measures involving voluntary data exchanges. The treaty allows the States parties to use information gathered through national technical means for verification and as the basis for on-site inspection requests.

The treaty may be amended with the approval of a simple majority of the States parties, but with no State party casting a negative vote (article VII). The treaty will be subject to review by all States parties ten years after entry into force (and may be reviewed every ten years thereafter per article VIII). The treaty is of unlimited duration, although each State party has the right to withdraw from the treaty if it decides that extraordinary events related to the treaty’s subject matter have jeopardized its “supreme interests” (article IX).

If the CTBT enters into force it will have a profound impact on the international security treaty structure. As said, the CTBT is the single most important element of the obligations of the NPT nuclear weapon States undertaken pursuant to article VI of the NPT. It is the barometer by which the non-nuclear weapon NPT parties judge the health of the NPT basic bargain and the underlying viability of the Treaty. The entry into force of the CTBT will rejuvenate the NPT and make the world a safer place.

Beyond this, a CTBT in force will mean it will no longer be possible to develop new types of sophisticated nuclear weapons and with the strength of the worldwide International Monitoring System behind it will make it impossible for additional States to acquire nuclear weapons except those of the crudest type, too heavy and unwieldy to be mated with a missile system. An operating CTBT regime will be a step toward the ultimate goal of eliminating nuclear weapons worldwide.

Related Materials

A. Legal Instruments

Treaty banning nuclear weapon tests in the atmosphere, in outer space and under water (Limited Test Ban Treaty), Moscow, 5 August 1963, United Nations, Treaty Series, vol. 480, p. 43.

Treaty on the Non-Proliferation of Nuclear Weapons, London, Moscow and Washington, 1 July 1968, United Nations, Treaty Series, vol. 729, p. 161.

Treaty on the Limitation of Underground Nuclear Weapon Tests, Moscow, 3 July 1974, United Nations, Treaty Series, vol. 1714, p. 123.

Treaty between the United States and the Union of Soviet Socialist Republics on Underground Nuclear Explosions for Peaceful Purposes, Washington, Moscow, 28 May 1976, United Nations, Treaty Series, vol. 1714, p. 387.

B. Documents

Decision 2 of the Conference of the Parties to the Treaty on the Non-Proliferation of Nuclear Weapons, Principles and objectives for nuclear non-proliferation and disarmament (NPT/CONF.1995/32 (Part I), annex).

Decision 3 of the Conference of the Parties to the Treaty on the Non-Proliferation of Nuclear Weapons, Extension of the Treaty on the Non-Proliferation of Nuclear Weapons (NPT/CONF.1995/32 (Part I), annex).

Letter dated 22 August 1996 from the Permanent Representative of Belgium addressed to the President of the Conference transmitting the text of a draft comprehensive nuclear test-ban treaty (CD/1427).

Letter dated 22 August 1996 from the Permanent Representative of Australia to the United Nations addressed to the President of the General Assembly (A/50/1024).

Letter dated 22 August 1996 from the Permanent Representative of Australia to the United Nations addressed to the Secretary-General (A/50/1027) (containing the draft text of the Comprehensive Nuclear Test-Ban Treaty).

General Assembly resolution 50/245 of 10 September 1996 (Comprehensive nuclear-test-ban treaty).