

COLLECTIVE SECURITY:

**A NEW ROLE FOR
BRITAIN**

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The Comprehensive Test Ban Treaty

For more than half a century, people and governments around the world have sought a permanent ban on nuclear testing in the belief that such a ban would halt the modernization and spread of nuclear weapons and lead, inexorably, to their decay and elimination. This aspiration is expressed in the Preamble to the 1996 Comprehensive Test Ban Treaty (CTBT):

"...[T]he cessation of all nuclear weapon test explosions and all other nuclear explosions, by constraining the development and qualitative improvement of nuclear weapons and ending the development of advanced new types of nuclear weapons, constitutes an effective measure of nuclear disarmament and non-proliferation in all its aspects,.... [A]n end to all such nuclear explosions will thus constitute a meaningful step in the realization of a systematic process to achieve nuclear disarmament,...."

However, on 13th October 1999, the United States Senate voted not to ratify the CTBT. This vote marked a watershed moment in the history of arms control, strongly signalling to the world that the United States has little interest in elimination of nuclear weapons. The intention of the US to pursue nuclear advantage rather than nuclear abolition was made manifest not only in the Senate vote itself, but in the debate which preceded it. The vote was characterized by many analysts as a display of domestic

political partisanship, but Republicans and Democrats share responsibility for the outcome. The Clinton administration and its allies in the Senate portrayed the CTBT not as a step on the road to nuclear disarmament but as a means to preserve the decisive technological advantage in nuclear weaponry held by the US, and as a means to prevent non-nuclear weapon states from acquiring nuclear weapons. At a 5th October White House press briefing, just a few days before the Senate vote, Under Secretary of State for Arms Control John Holum summed up the Administration's view: "The treaty bans the bang, not the bomb." This position was reaffirmed by Secretary of State Madeline Albright a month after the vote: "We simply do not need to test nuclear weapons to protect our security. On the other hand, would-be proliferators and modernizers must test if they are to develop the kind of advanced nuclear designs that are most threatening. Thus, the CTBT would go far to lock in a technological status quo that is highly favourable to us."¹

In fact, the Clinton Administration presented the CTBT to the Senate with a package of six "safeguards" including a commitment to maintain and expand an extensive array of nuclear weapons research, testing, and production facilities under the 'Stockpile Stewardship' program.²

Through this program, funded at over \$4.5 billion a year, new nuclear weapons facilities of unprece-

¹ Secretary of State Madeleine K. Albright, Remarks at Chicago Council on Foreign Relations, November 10th, 1999, Chicago, Illinois, as released by the Office of the Spokesman, US Department of State.

mented sophistication will be built, a new generation of nuclear scientists will be trained, and nuclear weapons design and production will go forward. Instead of hastening the elimination of nuclear weapons, in accord with global expectations for the CTBT, Stockpile Stewardship is at its core an *anti-disarmament* program. This 'deal', deemed necessary by the Administration to win over the nuclear weapons laboratories, the nuclear forces in the military, and their allies in the Senate, backfired. And now we have been left with the worst of all possible outcomes: billions of dollars for intensive innovation in nuclear weapons science and simulation, no test ban treaty, and no international mechanism to monitor and enforce a prohibition on nuclear weapons tests.

Today, the cycle of nuclear weapons design continues, despite the fact that the US last exploded a nuclear weapon underground in 1992. The Nevada Test Site remains ready for resumption of underground testing and is in use for a wide range of weapons experiments, including 'sub-critical' tests in which packages of high explosives and plutonium are exploded underground without quite reaching self-sustaining nuclear chain reactions. Similar tests are conducted in steel tanks above ground at the Los Alamos National Laboratory in New Mexico, using an isotope of plutonium with a higher critical mass than that used in weapons. This procedure may allow weapons designers to use test devices which more closely resemble nuclear weapons primaries, the first stage of thermonuclear warheads. Although these are tests of materials and components rather than full nuclear warheads, the Stockpile Stewardship program of which they are a part is intended to provide increasingly advanced capabilities to integrate data from a variety of testing techniques into simulations of nuclear weapons performance, aided by the world's fastest supercomputers.

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for full-scale nuclear weapons tests, sub-critical experiments make verification of a test ban more difficult, and manifest to the world the existence of a vigorous nuclear weapons research program and the intention to retain the capability for full-scale underground tests. While no verification regime can provide absolute certainty, closing all nuclear test sites and terminating 'sub-critical' tests which can resemble nuclear explosive tests when monitored from a distance would help simplify verification, while increasing international confidence that the nuclear weapons states were scaling back their weapons development efforts.

In today's limited Washington discourse, however, the governing vision is of a future dominated by the nation which can perpetually outpace all others in the deployment of high-tech military hardware. That is why the CTBT debate in the US was flawed

from the outset: even its advocates refused to talk about nuclear disarmament, arguing instead that the Treaty would preserve and enhance the superiority of US weaponry. And that is why there is an urgent need for bold, new, independent leadership by Britain. Her Majesty's Government can play an instrumental role in bringing the CTBT back into line with its historical disarmament purposes, thus increasing prospects for its eventual entry-into-force, and also strengthening the nuclear non-proliferation regime.

The CTBT and the NPT

Beginning next month, the states parties to the Nuclear Non-proliferation Treaty (NPT) will conduct the first review of the Treaty's operation since its extension in 1995. Following the breakdown of the NPT Preparatory Committee meetings in 1998 and 1999, many observers believe that the future viability of the NPT is in jeopardy. It is all the more necessary, therefore, to re-examine the promises and assumptions underlying the 1995 NPT extension deci-

² Letter from President William J. Clinton transmitting the CTBT to the Senate of the United States for its ratification, September 22nd, 1997.

sion, including its relation to the CTBT.

In 1995, the NPT parties reaffirmed their commitment to the Treaty and set out further steps for implementing its provisions in a set of 'Principles and Objectives for Nuclear Non-Proliferation and Disarmament.' The 'Principles and Objectives' document reaffirmed the nuclear weapon states' NPT Article VI obligation to "pursue negotiations in good faith on effective measures relating to the cessation of the nuclear arms race at an early date and to nuclear disarmament..." and listed the CTBT first among measures "important in the full realization and effective implementation of Article VI."

The pledge to complete a CTBT by 1996 was the most concrete promise made by the nuclear weapon states in connection with the 1995 NPT extension decision. While its Preamble states that the CTBT's provisions will constitute an effective disarmament measure, the US is actually using the CTBT as a justification for undertaking a major new program to replace underground nuclear test explosions through advanced technological means. The most recent annual White House national security strategy report describes "a forward-looking national security strategy for the new century." The report states that the US will retain its "nuclear deterrent posture" by maintaining "a robust triad of strategic nuclear forces" as well as "some US non-strategic nuclear forces... maintained in a forward-deployed status in NATO as a visible reminder of our security commitment." It concludes: "We must also ensure the continued viability of the infrastructure that supports US nuclear forces and weapons. The Stockpile Stewardship Program will provide high confidence in the safety and reliability of our nuclear weapons under the Comprehensive Test Ban Treaty."³

The CTBT and New Weapons Development

However, Stockpile Stewardship facilities can be used to do more than merely maintain existing nuclear warheads in working order. As Sandia National Laboratory director C. Paul Robinson noted in his 7th October 1999 testimony to the Senate Armed Services Committee on the CTBT, while the national laboratories "cannot create completely new concepts without testing, many previously tested designs could be weaponised to provide new military capabilities." Robinson observed that:

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"For example, if nuclear weapons emerge as the right answer to deter the use of other weapons of mass destruction in a regional conflict, the nuclear weapons we currently deploy may carry too high a yield and be far too disproportionate a response to be a credible deterrent.

Proven designs of lower yield exist that might be adaptable for new military requirements in the future. I believe that such weapons could be deployed this way without the need for nuclear tests."

One such modification, the B61-11 gravity bomb, already has been developed and deployed without underground testing. The B61-11 is an earth-penetrating bomb with a variable yield, which can be delivered by the B-2 Stealth bomber. Under the rubric of exercising Stockpile Stewardship capabilities, the US weapons laboratories also are developing replacement warhead designs for submarine launched ballistic missiles (SLBM) carried on Trident submarines, although no deployment plans have been made public. Upgrades of non-nuclear components also now underway could result in increases in accuracy for a substantial portion of the current SLBM warhead inventory⁴. Under the Stockpile Stewardship program, modifications or upgrades - including en-

³ *A National Security Strategy for a New Century*, The White House, December 1999, The White House Office of the Press Secretary, January 5th, 2000.

⁴ Greg Mello, "That old designing fever," *The Bulletin of the Atomic Scientists*, January/February 2000.

program, modifications or upgrades - including enhanced military capabilities - are planned for every weapon type in the US arsenal⁵. In a recent interview, Undersecretary of Energy Ernest Moniz declared: "Our tools under stockpile stewardship are working so well today that we are not only able to certify safety and reliability... but we are also able to meet new military requirements."⁶

US/UK Collaboration

Not surprisingly, Britain has embarked on its own Stockpile Stewardship program, in close cooperation with the US. While we are focussing here on the US and UK, it is important to acknowledge that each of the nuclear weapon states, including those not officially 'declared', has its own Stockpile Stewardship program, and that a high level of collaboration exists among many of these states.

Echoing official US language, the 1998 Hunting-BRAE Annual Report for the Atomic Weapons Establishment (AWE) states:

"The Strategic Defence Review... reaffirmed the Government's commitment to nuclear deterrence. It confirmed that the Trident submarine-launched weapons system will remain the United Kingdom's sole nuclear deterrent in both the strategic and sub-strategic roles... we ha[ve] in place a continuing planned production programme necessary to retain and exercise the manufacturing skills that will be needed to maintain the Trident warheads safely in service for the next 20-30 years. This vital role and the retention of the capability to design a new weapon if required was assured by the Review. However, this will need to be done without recourse to underground nuclear testing, following the United Kingdom's ratification of the Comprehensive Test Ban Treaty."

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For over forty years, Britain shared US nuclear testing facilities at the Nevada Test Site, and today the AWE continues to enjoy a close working relationship with the US nuclear weapons laboratories. For example, there are nineteen formal US/UK working groups which meet regularly to exchange information on nuclear weapons design, development, production, deployment and maintenance technology. There is virtually no doubt that the AWE is involved

in the US Trident upgrades described above. Officially, the British government says it currently has no plans to build a replacement Trident warhead, but AWE documents paint a different picture. From available evidence, it seems probable that Britain - like the US - intends to upgrade its Trident system using stockpile stewardship technologies⁷.

The CTBT and The National Ignition Facility

On 11th June 1999, a ceremony was conducted at the Lawrence Livermore National Laboratory in California, where Energy Secretary Bill Richardson dedicated the massive 150-ton metal sphere that will serve as the target chamber of the National Ignition Facility (NIF). The NIF is the centrepiece of the U.S. Stockpile Stewardship program; a laser driven fusion machine the size of a football stadium, designed to create for the first time, "nuclear fusion ignition," i.e. very brief, contained thermonuclear explosions. The NIF, which will be forty times larger than any laser in the world today, is slated to be used for a wide range of applications, from training weapons designers in nuclear weapons science to nuclear weapons effects testing. Also present at the ceremony were Graham Jordon, Deputy Under Secretary for Science and Technology, UK Ministry of Defence, and

⁵ *Stockpile Stewardship and Management Plan*, US Department of Energy (DOE) Office of Defense Programs, February 1996 and *Stockpile Stewardship and Management Plan: First Annual Update*, US DOE, October 1997. See also, "A Faustian Bargain: Why Stockpile Stewardship is Fundamentally Incompatible with the Process of Nuclear Disarmament," Andrew Lichterman and Jacqueline Cabasso, Western States Legal Foundation, April 1998.

⁶ James A. Kitfield, "The Decline of the Nuclear Stockpile," *Air Force Magazine*, February 2000 Vol. 83, No. 2.

⁷ "The Next Chevaline Scandal?" *Campaign for Nuclear Disarmament*, 12th August 1999.

Jacques Bouchard, Director for Military Applications, French Atomic Energy Commission.

During the ceremony, the speakers reaffirmed the central role of nuclear weapons in US, British, and French national security programs, and Secretary Richardson announced new collaborative agreements with France and the UK to share the facility and technology. For his part, Jordon announced that Britain intends to invest in the NIF in order to "secure access for our stockpile stewardship activities" and increase the facility's experimental capability.

Work is about to start, funded by the United Kingdom Ministry of Defence, to increase the shot rate of NIF very substantially in order to generate the necessary head room for the UK program. A feasibility study will also be conducted into the possibility of constructing a second UK target chamber, with the expectation that this will be constructed and completed within the next decade. This will improve the flexibility and versatility of the NIF substantially, thereby meeting the needs of both the UK and US programs.

Jordon concluded: "This joint venture, which is vital for both our nuclear deterrent programs, will further cement the very close and productive relationships which the United Kingdom and the United States have enjoyed in nuclear defence matters for over forty years." On 18th June, Secretary of State for Defence George Robertson confirmed in a written response to questions submitted by Alan Simpson, MP for Nottingham, South, that while:

"The precise details of our investment in the NIF have yet to be formalised in a contract with the US... I can, however, say that the investment, to cover a

shot rate enhancement programme and the design and construction of a UK target chamber, will be in the region of £100 million."

Although US Energy Secretary Bill Richardson proclaimed at the 11th June ceremony that the NIF was "on time and on budget", and "an example of excellent project management," he was subsequently embarrassed by the sudden resignation of the project manager amidst revelations of massive cost overruns and design delays attributed to mismanagement. Early estimates indicate that the NIF's costs could increase as much as \$350 million above the originally projected \$1.2 billion construction cost, and could delay completion of construction as much as two years. Several official investigations are currently underway⁸.

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Fusion explosions to be generated in the NIF and its French 'twin', the *Projet Megajoule*, now under construction in Bordeaux France, may actually violate the letter as well as the spirit of the CTBT, because sizeable explosions integral to a program avowedly devoted to maintenance and modification of existing nuclear weapons, as well as to mastering the capability to design new types of weapons will be generated. Article I of the CTBT prohibits "any nuclear weapon test explosion or any other nuclear explosion..." But it fails to define a nuclear test explosion. In a sworn affidavit, former leading US nuclear weapons designer Dr. Theodore Taylor stated:

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"If the NIF program meets its goal of producing more energy by small thermonuclear explosions than required to create the conditions for the explosions to take place, their energy release will be equivalent to at least several kilograms of chemical high explosive. Since the thermonuclear energy would be released in less than a billionth of a second, there is no

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⁸ Walter Pincus, "US Laser Program Faces Cost Overruns," *The Washington Post*, September 1st, 1999; H. Josef Hebert, "Energy Dept. Admits Laser Flaws," September 3rd, 1999, The Associated Press.

⁹ [Affidavit of Theodore B. Taylor in Support of Plaintiff's Reply to Defendants' Opposition to Plaintiffs' Motion for Preliminary Injunction, June 15th, 1997. Natural Resources Defense Council, et. al., v. Federico Peña, et. al., U.S. District court for the District of Columbia, Civil Action No. CV-97-0936.]

question about the events being called 'nuclear explosions'."⁹

In a letter dated 28th October 1999, US Senator Tom Harkin of Iowa wrote to the Secretary of Energy formally requesting an explanation of the legal and technical justifications for the US position, as he characterized it, that "thermonuclear explosions in the laboratory would be allowed under the CTBT, while nuclear fission explosions of a similar size would be banned."

The CTBT and the ABMT

The NIF, in combination with other Stockpile Stewardship facilities could potentially lead to the development, over the long term, of pure fusion weapons not requiring plutonium or uranium, and other new kinds of pulsed power and directed energy weapons. There is also evidence that the NIF may play a role in researching new missile defences. Official documents indicate that the NIF may prove useful in developing low-yield nuclear interceptors being developed by the US against ballistic missiles capable of carrying biological or chemical agents, as well as nuclear warheads.¹⁰ In the context of intensive US ballistic missile defence research and development, which currently threatens the viability of the Anti-Ballistic Missile Treaty (ABMT), such explorations clearly have more than theoretical relevance.

Stockpile Stewardship programs thus fundamentally undermine the CTBT's stated goal of "constraining the development and qualitative improvement of nuclear weapons and ending the development of advanced new types of nuclear weapons," and repre-

sent the antithesis of the NPT Article VI obligation, reinforced in July 1996 by the International Court of Justice, which unanimously held that "there exists an obligation to pursue in good faith and bring to a conclusion negotiations leading to nuclear disarmament in all its aspects under strict and effective international control." Moreover, new nuclear weapons designs, modifications and improvements directly contravene the "cessation of the nuclear arms race" Article VI provision and the April 1995 Declaration by France, Russia, the United Kingdom and the United States in connection with the NPT that "the nuclear arms race has ceased."¹¹ In fact, the close interconnections between research, design and testing of thermonuclear weapons and other forms of advanced weapons research, as described above, could ignite entirely new arms races.

Ongoing intensive nuclear weapons research, design, and testing has fostered widespread doubts about US - and UK - commitments to 'good faith' negotiations for nuclear disarmament required by the NPT, and has provided arguments for those in other states who favour nuclear weapons development to question the purposes of the CTBT

Ongoing intensive nuclear weapons research, design, and testing has fostered widespread doubts about US - and UK - commitments to "good faith" negotiations for nuclear disarmament required by the NPT, and has provided arguments for those in other states who favour nuclear weapons development to question the purposes of the CTBT. Indian Prime Minister Atal Bihari Vajpayee, for example, stated in an interview shortly after India's 1998 nuclear weapons tests that:

*"taken as a whole, the CTBT is discriminatory because it allows nuclear weapons states with advanced technology capabilities to continue their nuclear weapons programme. And so also is Nuclear Non-Proliferation Treaty. There is no question of India accepting any treaty that is discriminatory in character."*¹²

¹⁰ "Defense Against Biological or Chemical Bomblet Warheads with Nuclear Interceptors," Lawrence Livermore National Laboratory (LLNL) 1996, UCRL-ID-123815; "Nuclear Weapon Effect Test Facilitization of the National Ignition Facility, LLNL 1995, CD-95-0055; "Energy Deposition in a Biological Submunition Warhead by Low-Yield Nuclear Interceptors," LLNL 1994, UCRL-ID-119330.

¹¹ CD/1308, 7th April 1995.

¹² *India Today*, May 25th, 1998.

Conclusion

It is impossible to consider the CTBT as an isolated measure when the US Secretary of Energy - at a time of greatly heightened international tensions resulting from the contemporaneous US-led NATO bombing campaign in Yugoslavia - declares the presence of Drs. Bouchard and Jordon at a "landmark" NIF event, "the symbol of our allies, the US, France, Britain, collaborating together." He continued: "We've been together for so many issues: NATO, Kosovo, science. To have the three great allies together is really very special." His conclusion:

"Stockpile Stewardship is high technology in service to a great national goal. In 1993 President Clinton challenged the Department of Energy to find alternatives to nuclear testing... The National Ignition Facility is a dramatic example of our response to this challenge, and signing the Comprehensive Test Ban Treaty is its major reward. The continued success of stockpile stewardship will be essential for the Treaty to succeed. This facility carries on the partnership for mutual defence between the US and Great Britain forged by Franklin Roosevelt and Winston Churchill in the darkest days of World War II."

The ceremony described here was conducted with great pomp and circumstance; its participants included the 'father' of the hydrogen bomb, Edward Teller, officials from the US Strategic Air Command, and numerous other dignitaries. Sadly, in its essence, the event was not much different from Pakistan's national nuclear celebration - marked by a 21-gun salute, special prayers of thanks, and a minute of silence followed by the national anthem - conducted one month earlier to commemorate the first anniversary of its nuclear tests.¹³

Ironically, opinion polls in recent years show that 87% of both the American and British people agree

that their governments should promote negotiations for the abolition of nuclear weapons.¹⁴ But at the June NIF event, Graham Jordon described the UK's attitude towards its nuclear weapons this way:

It's our ultimate goal that one day...our children will live in a nuclear free world and we will continue to work vigorously for that objective. But we have to realize that many associated changes will first be required in the global security situation and those won't be achieved quickly or easily. So nuclear weapons will remain an important influence on our national security policy for a long time to come..."

Also at that NIF event, US Secretary of Energy Bill Richardson noted that, "The greatest value of international cooperation is not in the sharing of cost, although that is no small thing, but in the sharing of minds."

In a House of Commons Debate on Global Security and the Proliferation of Mass Destruction, 18th January 2000, Mr. Paul Keetch, Liberal Democrat MP for Hereford offered a bold new kind of thinking that would be well worth sharing with 'minds' in the United States government: "We should proceed with negotiations on a nuclear weapons convention to match those for chemical and biological weapons, and we should formalise the commitment of all nuclear weapons states to nuclear disarmament... we believe that this country has a unique and unambiguous role to do that."

¹³ A video of the 11th June 1999 NIF target chamber dedication ceremony is available from Gordon Yano, Public Information Officer, Lawrence Livermore National Laboratory, P.O. Box 808, L-797, Livermore, CA 94551, USA.

¹⁴ Polling data is available from Global Resource Action Center for the Environment, 15 East 26th Street, Room 915, New York, NY 10010, USA.