

CTBT/FMCT: Still the Priority

Notes for discussions at the Pugwash Workshop July 5-7, 2007

Revitalizing Nuclear Disarmament: Like-Minded States Working Together for a Nuclear Weapons-Free World

Thinkers' Lodge

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Conference participants are no doubt familiar with the comment, sometimes made by speakers whose presentations occur toward the end of a conference, to the effect that everything that is to be said about the topic at hand has already been said, but since it hasn't yet been said by everybody, here goes. That is how it seems to be with FMCT and CTBT. Both issues have been on the international disarmament agenda for so long that surely everything that could be said has been said. With that in mind, the following notes are simply intended to remind workshop participants of some elements of the ongoing debates on a fissile materials production ban and a nuclear test ban and to stimulate further discussion oriented toward thinking of new ways to advance toward action. Indeed, we can confidently expect that the discussion will confirm there are still so many scientific, technical, and political questions linked to these two issues that there remains much that is useful to be said.

FMCT

Current discussions in the CD on actions to ban the production of fissile material for weapons purposes continue to rely on the basic approaches of the Shannon mandate and the A-5 formula. The principle embedded in the Shannon mandate¹ is that the international community will not permit a single state or a small group of states to define in advance the parameters of multilateral negotiations on a particular issue. The principle in the A-5 formula² holds that the international community will not permit a minority of states to determine that multilateral attention will focus on their priority issue to the exclusion of the priorities of others. Combine the welcome tenacity of these two principles with consensus decision-making and you have the formula for what became a decade of stalemate at the Conference on Disarmament – and a decade of inaction on the FMCT.

A year ago Daryl Kimball reminded us how tantalizingly close we are to consensus support for the start of negotiations toward a permanent ban on the production of fissile material for weapons purposes:

“There has been a near-critical mass of support for the FMCT for several years. Four of the five original nuclear-weapon states have publicly declared they have suspended fissile production for weapons purposes. The fifth, China, is believed to have halted such production. India and Pakistan continue to produce plutonium and highly enriched uranium, but have stated that they support negotiation of a global FMCT. Israel's fissile production activity is not well known, but it has not publicly expressed opposition to a multilateral and verifiable FMCT. North Korea

restarted production of relatively small quantities of plutonium for weapons purposes, but has agreed to verifiably halt such production in the past.”³

An indication of the degree to which the international community already assumes a fissile materials production ban, the Blix commission report refers to the FMCT as a “vital global agreement” that is “not negotiated” – just as the CTBT is an agreement that is not ratified.⁴

In a sense this broad consensus (not the same as unanimous support, and notwithstanding deep divisions on the details) has been in place since 1946 when the Atomic Energy Commission’s first annual report to the Security Council recommended the establishment of an international agency to, among other responsibilities, provide for the disposal of fissile material stocks to ensure the prohibition of the manufacture and possession of nuclear weapons.⁵

But throughout, the majority voice in the international community has insisted that substantive work on the fissile materials issue at the CD should be carried out in the context of parallel attention (not necessarily negotiation) to three other issues (negative security arrangements, nuclear disarmament, and prevention of an arms race in outer space), in recognition that various elements of the international community have different but still legitimate security concerns worthy of multilateral attention. In 2004, the Bush Administration, with very little interest, it must be said, in any of the three parallel issues contemplated in the CD, also brought into question the sincerity of Washington’s support for a serious FMCT effort when it sought to unilaterally limit the parameters of the negotiation by insisting that effective verification of an FMCT would be too costly and “could compromise key signatories’ core national security interests.”⁶ Canada’s Amb Paul Meyer reminded the CD⁷ of the established and core requirement that compliance with arms control agreements be verifiable and concluded that an FMCT without verification provisions would be “merely a vague declaratory statement of good intentions about future production” and as such would be a “disservice” to the international community.⁸

Insistence on a broad, unconditional mandate for fissile materials negotiations will continue, as will the insistence that the focus on fissile materials not sideline the other three priorities of the A-5 formula.

The Urgent Need and the Prospects for action

The long-term consensus in support of a ban on the production of fissile material for weapons purposes is testimony to its undiminished importance. The MPI brief to the 2007 NPT PrepCom summarizes the benefits of such a ban:

“Achievement of an FMCT would restrain arms racing involving India, China, and Pakistan, cap Israel’s arsenal, and establish ceilings on other arsenals as well. A verified FMCT also would help build a stable framework for reduction and elimination of warheads and fissile material stocks; help prevent acquisition of

fissile materials by terrorists; meet a ke NPT commitment; and institutionalize on the basic pillars of a nuclear weapons-free world.”⁹

The CD has a way of tempting us into hoping, again and again, that action is not actually out of the question. All, or make that most, of the key players, those with fissile materials production capability, have incentives to join negotiations.¹⁰ The US and Russia, as well as the UK and France, would welcome an FMCT that would cap production in China, the DPRK, India, Israel, and Pakistan. China would welcome a cap on Indian production, and India would welcome a cap on Pakistani production. Steps are of course in place or being pursued to eliminate DPRK production, with or without an FMCT. Israel would derive advantage from an FMCT that leaves its existing stocks in place but verifiably precludes production by other states in its region. Pakistan has little incentive to negotiate a production ban, unless it was to include controls over existing stocks and thus lead to some level of parity with India.

Of course, there is no shortage of contrary interests. China, in particular, with its more limited stocks, worries about the ability to expand its arsenal if its minimum deterrence is threatened – notably by US missile defence. *India’s* emphasis on a “non-discriminatory” treaty is rooted in its long-standing rejection of the NPT double standard. But India is obviously divided – uncomfortable with a treaty that would freeze its stocks to levels significantly below China, but tempted by a treaty that would freeze Pakistani stocks at levels well below India. And the US rejection of verification is a reflection of the current Administration’s general approach toward multilateralism – welcomed as an instrument to constrain the options of others, rejected when its own options are constrained. The other states of the Middle East obviously have little incentive to pursue a treaty that halts production but leaves Israel’s stocks in place and implicitly blessed.

Scope: An FMCT or FMT?

The proverbial bottom line is that the Shannon Mandate is still in play – which is to say, questions of scope will have to be resolved during the course of negotiations, not in advance of them. In other words, any state would be free to raise any issue – including questions of scope and verification – during the course of the negotiations.

A production cut-off treaty (an FMCT) would ban all future fissile material production after a negotiated cut-off date, thus it would formalize the declared moratoria of the UK, US, Russia, and France, ensure that China would become part of the P5 halt to production, and ensure that fissile material production by India, Israel, and Pakistan would be capped.

As a result, an FMCT would essentially be a horizontal non-proliferation measure.

An agreement to control fissile materials (an FMT) would deal with existing stocks as well as future production, including provisions to limit the weaponization of existing materials produced for weapons purposes, and thus would be vertical non-proliferation, or disarmament measure, as well.

The International Panel on Fissile Materials (IPFM)¹¹ suggests that in either case a Treaty would also ban the use of existing non-weapons fissile materials for weapons purposes:

- Fissile materials in civilian use,
- Materials from dismantled weapons that have been declared excess for future military use, and
- Highly-enriched uranium designated for naval reactor use.

Verification of an FMCT

US rejection of a verifiable FMCT obviously opened a big hole in the global consensus and thus the scientific and diplomatic communities have been working to fill it back in by marshaling evidence in support of the scientific and political feasibility of a reliable verification regime.

Canada submitted a working paper to the CD (March 20/07) setting out some possible basic approaches to a verification regime that would “ensure confidence that all States parties are complying with their treaty-based commitment not to produce fissile material for nuclear weapons or other nuclear explosive devices.” The paper concludes:

“It should be possible to develop a technically, financially, legally and politically effective package of verification measures by using existing IAEA definitions, extending or adapting elements of the existing IAEA comprehensive safeguards regime to NWS and non-NPT states, and exploring supplemental measures for existing stockpiles and declared excess fissile material. The inclusion of such a verification package in an FMCT will help build confidence among States Parties that the treaty will meet its objectives.”

The IPFM discusses possible verification provisions in some detail and draws the conclusion that either a “comprehensive approach” or a “focused approach” to verification of an FMCT would be technically possible and affordable:

“In a comprehensive approach, the entire civilian fuel cycles of the nuclear weapon states would be put under the same type of safeguards required by the NPT in the non-weapon states. Thus, IAEA safeguards in the nuclear-weapon and non-weapon states would be identical, except inside the nuclear weapon complexes, where previously produced fissile materials could be stored and recycled into new nuclear weapons. IAEA monitoring could also be excluded from the naval-fuel-cycle to the extent that previously produced fissile material was being used for fuel.” (p. 43)

‘In a focused approach, safeguards would be applied only on enrichment and reprocessing facilities, and on any new fissile material produced in these facilities. This approach would monitor all the inputs and outputs of declared reprocessing facilities and down-stream mixed-oxide (MOX, i.e. plutonium-uranium) fuel-fabrication plants, and follow the MOX fuel until it is loaded into a reactor. It

would also verify that uranium-enrichment plants are not producing HEU or, if they are, that its use is monitored.” (p. 43)

On the matter of costs, the IPFM concluded: “Not only would the cost of verifying an FMCT be less than sometimes imagined, but so also would be the cost difference between comprehensive and focused safeguards.” (p. 45)

In other words, inasmuch as the verification of arms control treaties is critical to their effectiveness and to public and state confidence in them, the evidence being assembled suggests that effective verification is eminently possible – technically and financially.

The FMCT inside and outside(?) the CD

In 2005 a group of six states¹² proposed that the General Assembly establish “open-ended Ad Hoc Committees” for each of the four priority issues of the A-5 formula and that are before the stalemated (CD): negative security arrangements; nuclear disarmament; FMCT; and PAROS. The proposal was careful to recognize the CD’s formal role and purpose and thus included the proviso that “upon the adoption of a Programme of Work in the Conference on Disarmament, the work of the relevant Ad Hoc Committees will cease and the results obtained shall be transmitted to the President of the Conference on Disarmament.”

The proposal for the FMCT Ad Hoc Committee called on it to “negotiate, on the basis of the report of the CD’s Special Coordinator (CD/1299) and the mandate contained therein [the Shannon mandate], a non-discriminatory, multilateral and internationally and effectively verifiable treaty banning the production of fissile material for nuclear weapons or other nuclear explosive devices.”

The proposal cited not only the continuing failure of the CD to agree to a Program of Work, but also the failure of the 7th (2005) NPT Review Conference and the failure of the 2005 UN Summit “to address substantively the non-proliferation and disarmament agenda.”

The proposal provoked a sharp response from some nuclear weapon states, especially the United States, which circulated a document denouncing it as “a divisive proposal” that was trying to create a “‘phantom’ CD” and declaring that “the United States will NOT participate in any international body to whose establishment the United States does not agree.” The statement concluded that the “United States will not consider itself bound in any way by any agreement emerging from such a body.” The six states subsequently withdrew the proposal, noting that the six CD Presidents for 2006 were planning structured discussions in the CD on each of the core issues, and serving notice that “if, for whatever reason, the CD turns in another sterile year in 2006, we will retain the option of reintroducing this initiative as a way of ensuring that there are democratic and multilateral alternatives to a situation where the security interests of the many are being held hostage by the policies of a few.”

The measure was not proposed in 2006, largely because states welcomed the invigorated discussions at the CD that year. The continuing failure of the CD to end its debilitating stalemate suggests it may now be time to bring the measure forward again.

Blix Commission recommendations

WMDC Recommendation 26 re FMCT (p. 105):

“The Conference on Disarmament should immediately open the delayed negotiations for a treaty on the cut-off of production of fissile material for weapons without precondition. Before, or at least during, these negotiations, the Conference on Disarmament should establish a Group of Scientific Experts to examine technical aspects of the treaty.”

WMDC Recommendation 27 re FMCT (p. 105):

“To facilitate fissile material cut-off negotiations in the Conference on Disarmament, the five Non-Proliferation Treaty nuclear-weapon states, joined by the other states possessing nuclear weapons, should agree among themselves to cease production of fissile material for weapon purposes. They should open up their facilities for such production to International Atomic Energy Agency safeguard inspections, building on the practice of Euratom inspections in France and the UK. These eight states should also address the issue of verifiable limitations of existing stocks of weapons-usable nuclear materials.”

Next Steps

In the context of ongoing pressure in support of the basic objectives articulated above by the Blix Commission, the international community needs to intensify diplomatic measures to advance toward concrete action:

1. Keep up the pressure for taking the FMCT/FMT issue (along with the other three A-5 issues) outside the CD until such time as the CD is prepared to enter into negotiations based on the modified Shannon mandate (no preconditions). In particular, a measure such as the resolution proposed to the First Committee in 2005 should be revived and circulated for co-sponsorship.
2. States in the CD should continue to insist on the principle of entering negotiations without preconditions and to support substantive attention in parallel to the other priorities of the A-5 formula.
3. Promote and sponsor ongoing technical work -- for example: the studies and engagement of the International Panel on Fissile Materials; national working papers such as the Canadian paper on verification. In addition, the CD should continue to welcome expert briefings or member states should sponsor briefings to which CD member states are invited.

CTBT

Until October 9, 2006 it was possible to speak of a de facto weapons ban. The DPRK test of that day, as did the earlier Indian and Pakistani tests, illustrates the inadequacy of unilaterally declared moratoria and the critical importance of finally achieving the ratification of the CTBT, the negotiation of which was a landmark achievement of the early years of the post-Cold War era. Again, our friends at MPI summarize the benefits and urgency of the CTBT's entry into force:

“The CTBT would help to check the spread of nuclear arms and to constrain refinement of advanced arsenals; protect the environment; and have a substantial organizational and technical infrastructure. Like the FMCT, it would be an indispensable part of the architecture of a nuclear weapons-free world.”

Daryl Kimball¹³ argues the urgency of entry into force of the CTBT like this:

- “To impede the development of new types of nuclear warheads and reduce dangerous nuclear arms competition;
- To obstruct the emergence of new nuclear powers;
- To ensure completion of the international monitoring system and availability of on-site inspections to detect and deter cheating; and
- To restore confidence in the nuclear Nonproliferation Treaty.”

Ratification status

The CTBTO reports that, as of June 20/07:

- 177 states have signed the Treaty;
- 138 have ratified it; and
- 34 of 44 Annex II states have ratified it.

There are 10 Annex states whose ratification is still required. The US and China, which have both signed, are the only two acknowledged NWS still to ratify. All of the three-plus-one states outside the NPT (India, Israel, Pakistan, and DPRK) still need to ratify the treaty (and, of those, only Israel has signed). Four NNWS on the Annex II list still need to ratify the treaty (although all have signed) – Colombia, Egypt, Indonesia, and Iran.

Progress toward entry into force

Ambassador Jaap Ramaker's assessment of the chances of further ratifications is measured. “Ratification of the CTBT [by the six holdout states in the Middle East, and North and South Asia] is in one way or the other tied to wider regional security issues. This complicates matters, and certainly limits severely whatever I as a Special Representative could do to move matters forward.”¹⁴

Chinese ratification is linked to their perception of US nuclear weapons policies, which at the moment do not incline China to move forward. The US itself is not inclined in that

direction, even though expert opinion is heavily weighted toward the view that the Treaty's entry into force would be to the strategic advantage of the United States. The momentum could, however, obviously change dramatically if there was a change of approach in Washington, and after the 2008 election that hoped for change may not be as remote as it now seems. Some advocates of a continuing and enhanced US nuclear weapons arsenal support the CTBT on grounds that it "would freeze a US advantage in nuclear weaponry and that the stockpile stewardship program can maintain US weapons without testing."¹⁵

All Middle Eastern Annex II states have signed the Treaty, but it is likely that ratification will have to be in concert in the region, which in turn depends on substantial change in the regional dynamics. At the 2005 entry into force Conference, Egypt linked its support for the CTBT to Israel's accession to the NPT and called for "the achievement of the universality of both the NPT and the CTBT together."¹⁶ Coordinated accession to the Treaty may also be the case for South Asia, although the international community has a particular opportunity to help India understand that ratification could assist its transition toward normalization with regard to civilian nuclear cooperation and greater participation in the collective pursuit of the disarmament objectives it insists it shares with the international community.

The 10 Annex II holdout states represent a startlingly diverse range of interests, which is to say that early entry into force is unlikely.

The establishment of the Annex II list of required ratifications created an (impossibly?) high threshold for Treaty's entry into force – a threshold that has produced explorations of ways of getting around the barrier, if it turns out to be impossible to get over it. Amb Ramaker reminds us of some of the options considered:

- Quit trying, and instead rely on unilateral moratoria and rely on the IMS to verify compliance and on political pressures to maintain compliance.
- Try to amend the Treaty to lower the threshold.
- Pursue a provisional entry into force whereby the currently ratifying states would gather and declare themselves fully bound by the Treaty (but implying that signatories are not already bound by it).

None of these options is satisfactory inasmuch as each would be a major retreat from the original expectations, and none is really significantly more achievable than full ratification.

Support for the CTBTO

The CTBTO reports¹⁷ that it is currently short \$24 million to meet its 2007 budget of \$110 million. The United States has accumulated arrears of \$28 million (which the Nukes of Hazard blog points out is about two and a half hours of spending on the Iraq war)¹⁸ and other countries, including Argentina, Brazil, Columbia, and Iran, are also behind in their payments.

OneWorld.net offers a helpful summary of the funding issue and the case for bringing it up-to-date: “As the appropriations process moves forward in Congress, one line item should not be missed: funds for the Comprehensive Test Ban Treaty Organization (CTBTO), an international organization that detects nuclear explosions. The U.S. currently owes \$28.3 million in back dues to the organization. Absent these funds, the CTBTO will be unable to complete its critical monitoring system. The World Is Safer Without Nuclear Testing. Our failure to make timely payments threatens to cripple the international monitoring system of the CTBTO, unravel the global nonproliferation web, and make the world less safe. A Good Investment in Security. The monitoring system offers access to sensitive information that the U.S. can't attain on its own. The U.S. intelligence community also values the system because it can catch small, hard-to-detect nuclear events. U.S. Leadership Needed. We must support this critical tool if we hope to marshal global efforts to meet serious nuclear challenges.”¹⁹

In March a group of organizations called on the US to restore full funding for an organization whose monitoring efforts directly serve the security interests of the United States.²⁰

“It is tragic that the U.S. is underfunding the CTBTO as the danger of Iran's nuclear program grows and as the IMS [International Monitoring System] succeeded in providing valuable information about North Korea's October 9, 2006 test explosion. Over 10 seismic stations in the IMS detected the blast, which was well below 1 kiloton in yield. In addition, one of the network's 10 experimental “noble gas” monitoring stations detected trace amounts of radioactive material unique to nuclear explosions. The station, which is located in Canada’s Northwest Territories, detected spikes in xenon gas readings on late October, which, on the basis of atmospheric modeling, provided further confirmation to the United States and other governments that the Pyonyang's test was nuclear and not a simply a chemical explosion.”

US voting rights in the CTBTO Preparatory Commission had been suspended from January 1, 2007, and a Congressional Research Service report points out that the underfunding stems from a US policy decision: “Since the United States does not seek entry into force of the CTBT but favors improving means of monitoring nuclear testing, the Administration requests only those funds for the PrepCom that directly support the IMS.”²¹ In practice the CTBTO PrepCom takes decisions by consensus rather than by votes.

Canadian analyst George MacLean has argued that since all of the foundational elements of the CTBT depend on its verification capacity – “a commitment to a testing moratorium; technical exchange and assistance for states parties; effective and universal verification and monitoring; and confidence-building among members of the Organization” – it is possible for the CTBTO to carry out its core work without EIF. This speaks to the further strengthening and development of the monitoring system and related facilities.²²

Blix Commission recommendations

WMDC Recommendation 28 re CTBT (p. 108):

All states that have not already done so should sign and ratify the Comprehensive Nuclear-Test-Ban Treaty unconditionally and without delay. The United States, which has not ratified the treaty, should reconsider its position and proceed to ratify the treaty, recognizing that its ratification would trigger other required ratifications and be a step towards the treaty's entry into force. Pending entry into force, all states with nuclear weapons should continue to refrain from nuclear testing. Also, the 2007 conference of Comprehensive Nuclear-Test-Ban Treaty signatories should address the possibility of a provisional entry into force of the treaty.

WMDC Recommendation 29 re CTBT (p. 108):

All signatories should provide financial, political and technical support for the continued development and operation of the verification regime, including the International Monitoring System, the International Data Centre and the secretariat, so that the CTBTO is ready to monitor and verify compliance with the treaty when it enters into force. They should pledge to maintain their respective stations and continue to transmit data on a national basis under all circumstances.

Next steps

In the context of the above recommendations of the Blix Commission, essentially a call to the international community to comply with the objectives it has itself defined, the workshop discussion will need to explore ideas for intensifying political and diplomatic pressure in support of those agreed goals.

1. Part of the process of building confidence in the non-testing norm and support for the treaty itself is for states that have ratified the Treaty to make it clear that they are committed to pursuing significant punitive measures against states that violate the global norm against testing that the CTBT represents.
2. It is obvious that there needs to be persistent diplomatic engagement by "friends of the CTBT" as well as regional organizations and regional groupings to encourage Annex II hold-outs to ratify the Treaty, but also to encourage any other states that have not signed the Treaty.
3. Offers of technical assistance to hold-out and non-signatory states are also important.
4. Financial and technical support for the CTBTO and the IMS is critically important, recognizing that the operation of the monitoring system in effect represents the de facto entry into force of significant elements of the Treaty.
5. There should also be explorations of regional or bilateral moratoria which can be converted joint accessions to the Treaty.

India, the NSG, and Advancing CTBT/FMCT Action

The Nuclear Suppliers Group is obviously in a position to make civilian nuclear cooperation with India (and other non-NPT states) conditional on a verifiable freeze on the production of fissile material for weapons purposes until an FMCT/FMT converts such a freeze into a permanent ban.

US legislation in support of the US-India civilian nuclear cooperation proposal stipulates that the US will terminate bilateral civilian nuclear cooperation if India tests another nuclear device. India is currently resisting that condition, but it is a condition that should be made stronger and be multilateralized at the Nuclear Suppliers Group – that is, to make CTBT ratification, not just a suspension of testing, a precondition (among others) for civilian nuclear cooperation with India (and other states outside the NPT).

Blix Commission recommendation

WMDC Recommendation 13 re India/Pakistan and CTBT/FMCT (p. 108):

“India and Pakistan should both ratify the CTBT and join those other states with nuclear weapons that have declared a moratorium on the production of fissile material for weapons, pending the conclusion of a treaty. They should continue to seek bilateral détente and build confidence through political, economic and military measures, reducing the risk of armed conflict, and increasing transparency in the nuclear and missile activities of both countries. Eventually, both states should become members of the Nuclear Suppliers Group and Missile Technology Control Regime, as well as parties to International Atomic Energy Agency safeguards agreements under the terms of the 1997 Additional Protocol.”

Next steps

1. International diplomacy should work toward ensuring that NSG action on the US-India deal includes conditions related to a verifiable moratorium on fissile materials production, pending the negotiation of a fissile materials treaty, and a moratorium on testing pending ratification of the CTBT.

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Notes

¹ The agreement, facilitated and reported on March 24/95 by Amb Gerald Shannon, that the CD would establish an Ad Hoc Committee on a “ban on the production of fissile material for nuclear weapons or other nuclear explosive devices,” and that the Committee was directed “to negotiate a non-discriminatory, multilateral and internationally and effectively verifiable treaty banning the production of fissile material for nuclear weapons or other nuclear explosive devices.”

² The June 26/03 initiative of five CD ambassadors for a program of work based on four concurrent Ad Hoc committees which would respectively “negotiate with a view to reaching agreement on effective international arrangements to assure non-nuclear –weapon states against the use or threat of use of nuclear weapons;” “exchange information and views on practical steps for progressive and systematic efforts to attain [the cessation of the nuclear arms race and nuclear disarmament];” “negotiate, on the basis of [the Shannon mandate], a non-discriminatory, multilateral and internationally and effectively verifiable treaty banning the production of fissile material for nuclear weapons or other nuclear explosive devices;” and “identify and examine, without limitation, any specific topics or proposals...[toward] preventing an arms race in outer space, including the possibility of negotiating a relevant international legal instrument.”

³ Daryl G. Kimball, “Accelerating the Entry Into Force of the Comprehensive Test Ban Treaty and Securing a Fissile Material Cut Off Agreement”.

⁴ *Weapons of Terror: Freeing the World of Nuclear, Biological and Chemical Arms*, The Weapons of Mass Destruction Commission, chaired by Has Blix, 2006; p. 24.

⁵ Lauren Barbour, Fissile Material Cutoff Treaty: A Chronology, Institute for Science and International Security, <http://www.isis-online.org/publications/fmct/chronology.html>.

⁶ “The United States and the Fissile Material Cutoff Treaty,” US Department of State, March 17/07 (<http://www.state.gov/t/isn/rls/other/81950.htm>).

⁷ “Conference On Disarmament Starts Thematic Debate On Issue Of A Fissile Material Cut-Off Treaty,” May 16/06, daily summary of CD debate, available at <http://www.reachingcriticalwill.org/political/cd/press06/16may.htm>.

⁸ Canadians who have followed this issue for some time, by the way, will appreciate Amb Meyer’s recollection of Prime Minister Pierre Trudeau’s “strategy of suffocation” in the context of current FMCT discussion, again reminding us of the long-standing objective, and some precedented action, to control fissile material. Amb Meyer’s statement continues: “Thus the principle is simple: turning off the supply of such material makes nuclear weapons proliferation, both vertical and horizontal, more difficult. Important international initiatives to restrict or eliminate access to fissile material for weapons purposes such as the Global Partnership programme, the Global Threat Reduction Initiative, the Plutonium Disposition Agreement, the Trilateral Initiative and the United States-Russia HEU Agreement are aimed at this goal. But while these initiatives are an attempt to deal with existing excess stockpiles of such material, they do not address the capability of States to produce yet more for non-peaceful purposes. This is the gap which needs to be closed.”

⁹ Towards 2010: Priorities for NPT Consensus, Middle Powers Initiative for the NPT Preparatory Committee, April 2007.

¹⁰ Jenni Rissanen, “Time for a Fissban – or Farewell?,” *Disarmament Diplomacy*, Winter 2006, p. 16.

¹¹ Global Fissile Material Report 2006, First report of the International Panel on Fissile Materials (Program on Science and Global Security, Princeton University).

¹² Brazil, Canada, Kenya, Mexico, New Zealand, Sweden.

¹³ Daryl G. Kimball, “Accelerating the Entry Into Force of the Comprehensive Test Ban Treaty and Securing a Fissile Material Cut Off Agreement” (presentation for the 18th UN Conference on Disarmament Issues in Yokohama, August 2006).

¹⁴ Jaap Ramaker, presentation to MPI Article VI Forum, Ottawa, September 28, 2006.

¹⁵ Jonathan Medalia, “Nuclear Weapons: Comprehensive Test Ban Treaty, CRS Report for Congress (RL33548), May 24, 2007.

¹⁶ Daryl Kimball, “Keeping Test Ban Hopes Alive: The 2005 CTBT Entry-into-Force Conference,” *Disarmament Diplomacy*, Winter 2005.

¹⁷ <http://www.ctbto.org/>

¹⁸ <http://nukesofhazard.blogspot.com/2007/06/us-under-funds-undercuts-nuclear-test.html>

¹⁹ June 24, 2007, <http://us.oneworld.net/article/view/150373/1/?PrintableVersion=enabled>.

²⁰ March 27, 2007, http://www.fcnl.org/issues/item_print.php?item_id=2526&issue_id=50.

²¹ Jonathan Medalia, "Nuclear Weapons: Comprehensive Test Ban Treaty, CRS Report for Congress (RL33548), May 24, 2007.

²² George A. MacLean, "Advancing the Comprehensive (Nuclear) Test Ban Treaty: Capabilities, Implementation, and Entry into Force," International Security Research and Outreach Program, Department of Foreign Affairs and International Trade, Canada, October 2002 (http://www.dfait-maeci.gc.ca/arms/isrop/research/MacLean_2002/menu-en.asp#toc).