
Conference on Disarmament

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Note verbale dated 23 May 2011 from the Permanent Mission of Australia to the Conference on Disarmament addressed to the Secretary-General of the Conference transmitting the Chair's report of the Australia-Japan experts side event on FMCT verification, held at the Palais des Nations in Geneva on 21-23 March 2011

The Australian Permanent Mission to the Conference on Disarmament presents its compliments to the Secretary-General of the Conference on Disarmament, and has the honour to transmit the attached report, entitled "Australia-Japan Experts Side Event on FMCT Verification, Palais des Nations, Geneva, 21-23 March 2011, Report of the Chair, Mr. Peter Woolcott, Ambassador of Australia".

The Australia-Japan Experts Side Event on FMCT Verification addressed the issue of how a future treaty banning the production of fissile material for nuclear weapons or other nuclear explosive devices might be verified. This is an issue of relevance to the Conference's agenda item 1 "Cessation of the nuclear arms race and nuclear disarmament" and its agenda item 2 "Prevention of nuclear war, including all related matters".

The Australian Permanent Mission would be grateful if this report could be issued as an official document of the Conference on Disarmament and distributed to all Member States to the Conference, as well as to Observer States participating in the Conference.

**Australia-Japan Experts Side Event on FMCT Verification
Palais des Nations, Geneva, 21-23 March 2011
Report of the Chair
Mr. Peter Woolcott, Ambassador of Australia**

I. Introduction

About the event

1. On 21-23 March 2011, Australia and Japan co-hosted a three-day “Experts Side Event on FMCT Verification” in the Palais des Nations, Geneva. Mr. Peter Woolcott, Ambassador of Australia chaired the event, assisted as Vice-Chair by Mr. Bruno Pellaud (Doctor) of Switzerland on 21 March and by Mr. Malcolm Coxhead of Australia on 22-23 March.
2. Representatives of 38 member States of the Conference on Disarmament (CD) and five observer States attended the event, as did representatives of the International Atomic Energy Agency (IAEA), the Organisation for the Prohibition of Chemical Weapons (OPCW), the United Nations Office for Disarmament Affairs (UNODA) and the United Nations Institute for Disarmament Research (UNIDIR).
3. The topic of this event was verification of a treaty banning the production of fissile material for nuclear weapons or other nuclear explosive devices, commonly known as the Fissile Material Cut-Off Treaty (FMCT).
4. Following the Australia-Japan “Experts Side Event on FMCT Definitions”, held in Geneva 14-16 February 2011 (see CD/1906 of 14 March 2011), the purpose of this event was to continue building confidence about FMCT and momentum towards FMCT negotiations in the CD on the basis of CD/1299 of 24 March 1995 and the mandate contained therein. Its purpose more broadly was to inform and support the work of the CD and to build confidence among its member and observer States.
5. This event did not represent a negotiation, nor a pre-negotiation, but an opportunity to exchange views and to explore relevant issues. During this event, no agreements were sought and no decisions were taken. Views expressed during this event were without prejudice to national negotiating positions when FMCT negotiations in the CD begin.
6. The event consisted of three sessions. On 21 March, there was a general discussion on the possible parameters for FMCT verification. On 22 March, Mr Eric Pujol from the Division of Concept and Planning of the IAEA’s Department of Safeguards gave a presentation on the IAEA’s verification experience which framed a discussion on its possible relevance to FMCT verification. On 23 March, Mr. Horst Reeps (Doctor), Director of the OPCW’s Verification Division, gave a presentation on the OPCW’s verification experience which framed a discussion on its possible relevance to FMCT verification.

About this report

7. As with the report of the Australia-Japan Experts Side Event on FMCT Definitions contained in CD/1906 of 14 March 2011, this report represents the Chair’s personal summary of the event. It draws no conclusions about the issues discussed during the event. The purpose of this report is not to predetermine the conduct of future FMCT negotiations in the CD, but to inform and support the work of the CD and to stimulate further substantive exchanges in the CD on issues related to an FMCT.

II. Presentations

8. On 21 March, the Vice-Chair (Mr. Pellaud) framed the general discussion on the possible parameters of FMCT verification by posing four questions which might be relevant to the work of inspectors in a verification regime and hence relevant for the work of negotiators in developing an FMCT verification system. He also offered for consideration some general responses to each of the questions as they related to an FMCT.

(a) What is to be verified? The Vice-Chair suggested that this question would be answered on the basis of definitions for fissile material and production and of treaty scope, as decided in negotiations;

(b) Is there information to which inspector access might be restricted? The Vice-Chair suggested that some information relating to weapons (such as shape and isotopic composition) might need to be protected due to its proliferation sensitivity;

(c) What is the purpose of the verification? The Vice-Chair suggested that the most basic purpose would be to ensure that fissile materials for nuclear weapons and other nuclear explosive devices were not further produced;

(d) What level of assurance is sought from the verification? The Vice-Chair suggested that the targeted degree of assurance was the key determinant in establishing a verification system. He offered a continuum of possible levels of assurance – from absolute, to credible, reasonable and satisfactory. Achieving an optimal degree of assurance meant balancing the marginal cost of increased assurance with the costs and consequences of non-detection and detection failures.

9. The Vice-Chair suggested that a structured conceptual framework could guide the development of FMCT verification. This could mean constructing an FMCT verification system around the following concepts:

(a) verification objectives – the primary aim of inspections would be the verification of the absence of any fissile material (as defined), especially its production (as defined), except for non-proscribed use, as well as the deterrence of violations by the risk of early detection;

(b) verification approaches – methodologies for systematic verification of FMCT-relevant facilities to ensure that any production of fissile materials for weapons purposes would be detected;

(c) verification measures – technical methods and data analysis tools available to achieve the applicable verification objectives, including inter alia material accountancy, containment, surveillance and environmental sampling;

(d) verification criteria – verification activities considered necessary by the inspectorate for providing credible assurances of compliance; the criteria could be established for each facility type, and specify the scope, the normal frequency and the extent of the verification activities required; the criteria could be used both for planning the implementation of verification activities and for evaluating the results; and

(e) inspection goals – performance targets specified for verification activities at a given facility as required to implement the facility verification approach; the goals would be fully attained if all the criteria relevant at and to the facility had been satisfied.

10. The Vice-Chair suggested that in practical terms, a range of FMCT verification options were possible. Though not exhaustive nor (as some participants remarked) mutually exclusive, these possible options as suggested by the Vice-Chair included:

(a) state declaration of compliance (i.e. no verification);

- (b) instrumented verification, including through remote monitoring, automatic sample taking, satellite surveillance;
- (c) verification limited to significant production facilities;
- (d) random verification of further nuclear facilities, including through challenge inspections; and
- (e) full verification of all nuclear facilities.

Setting aside the first option (which some participants remarked was inconsistent with the provision for an effectively verifiable FMCT in CD/1299 of 24 March 1995), the Vice-Chair suggested that it was possible to imagine a treaty very broad in its definitions and scope, with a verification system of limited stringency. Conversely, it was possible to imagine an extremely stringent verification system on a treaty with limited definitions and scope.

11. On 22 and 23 March respectively, Mr. Pujol and Mr. Reeps gave overviews of the IAEA and OPCW and the nature of their verification work. Mr Pujol addressed the concepts of conversion time, detection time, significant quantities and detection probability as components of IAEA inspection goals; nuclear material accountancy; containment and surveillance; design information verification; the respective safeguards coverage under Comprehensive Safeguards Agreements and Additional Protocols; complementary access; advanced technology, including environmental sampling, remote monitoring and satellite imagery; application of safeguards at enrichment and reprocessing plants (including in nuclear-weapons states); and new roles for the IAEA in verifying arms control and disarmament.

12. Mr. Reeps addressed the verification process cycle (declaration, evaluation, on-site inspection and data monitoring, analysis and reporting); initial and annual declarations under CWC (Chemical Weapons Convention) Articles III-VI; verification of chemical weapons destruction; verification of chemical weapons facility destruction; verification of chemical weapons facility conversion; inspections (including challenge inspections); industry verification, including industry inspections; and trade monitoring.

13. The comparison of the IAEA and OPCW regimes illustrated different approaches to verification and also posed the question of the extent to which verification should be codified in a treaty – IAEA safeguards being an adaptable regime which has evolved over time, and OPCW verification having parameters specifically governed by an annex to the CWC.

III. Discussions

14. During the discussions following the three presentations, participants raised a number of issues relevant to FMCT verification. Two key issues to emerge were: the possible relationship between IAEA safeguards and FMCT verification; and the scope of FMCT verification objectives. And two broad sets of views were expressed during discussions around these two key issues.

15. On the one hand, some participants drew a connexion between IAEA safeguards under the Nuclear Non-Proliferation Treaty (NPT) and verification under an FMCT in respect of prohibiting production of fissile material for nuclear weapons. They expressed the view that FMCT verification should be developed directly out of the IAEA safeguards system and should be undertaken by the IAEA. The IAEA would need the legal mandate and resourcing to do so, as well as the technical capacity to verify and manage effectively a broader range of potentially proliferation-sensitive information. FMCT verification developed from the IAEA safeguards system would avoid duplication of systems and

provide the basis for a non-discriminatory and comprehensive system with essentially the same verification objective as IAEA safeguards – a verification system which irreversibly addressed non-production and non-diversion of fissile material for nuclear weapons, including through full material accountancy and conversion or destruction of decommissioned facilities. Creating a separate verification system for an FMCT with markedly different verification standards from the IAEA safeguards system risked undermining the latter.

16. On the other hand, some participants drew a distinction between IAEA safeguards under the NPT and verification under an FMCT. The former was designed to prevent the production of a first nuclear weapon in a state; the latter would operate in the context of existing nuclear weapons. Moreover, the safeguards system based on INFCIRC/153 was not applied universally. More broadly, it was premature to make assumptions about the form of FMCT verification and the entity charged with its implementation. These issues would be decided in negotiations and it was important to explore all options to ensure that an appropriate verification system which was tailored to the agreed definitions and scope resulted. Political objectives would guide the development of FMCT verification. The primary objective of an FMCT remained the prohibition of production of fissile material for nuclear weapons.

17. While these differences emerged, it is worth noting that some proponents of the views set out in paragraph 15 suggested that different verification standards tailored to particular types of facilities could be considered for an FMCT. Some proponents of the views set out in paragraph 16 noted that the application of IAEA safeguards to some production facilities in nuclear-weapons states showed the possible relevance of IAEA safeguards to an FMCT. An FMCT whose verification was focused on production facilities could avoid duplication of systems.

18. Some participants suggested that it might be useful to “unpack” language describing verification objectives and examine each element in more detail to bridge the differing views on what type of verification was appropriate for an FMCT.

19. Recalling the assessment of FMCT verification costs conducted by the IAEA in 1994, some participants also suggested that an updated assessment would be timely. An updated assessment could be structured on the basis of a range of verification options, as verification costs would be dependent on the definitions given to fissile material and production in an FMCT and on the facilities at which verification measures were applied. It was noted that an updated assessment would not be a simple exercise, as it would require evaluation and application of cost methodologies to facilities and technologies not in existence in 1994. If the IAEA were requested by states to make an updated assessment, resources would need to be allocated.

20. The discussion of other issues relevant to FMCT verification are summarised through the following series of questions which may be the basis for further reflection, including by those negotiating an FMCT:

(a) Effects of technological and political change on FMCT verification: How might FMCT verification provisions be developed so that they could both reflect and take advantage of possible technological change? How might FMCT verification provisions be developed so that they could reflect possible political developments in nuclear non-proliferation and disarmament? Taking such possible change into consideration, how might FMCT verification be defined in an instrument – as set provisions of a treaty or a separate protocol, or as a more easily adapted and amended set of procedures sitting outside the treaty? How might an FMCT contain provision for research and development relevant to treaty verification?

(b) Non-routine forms of verification in an FMCT: Should non-routine forms of verification – such as random inspections and complementary access – be part of an FMCT? Given that some regard the usability, and thus deterrence value, of the CWC's challenge inspection mechanism as limited, should challenge inspections be part of an FMCT? What might be the role and deterrence value of non-routine forms of verification relative to routine forms of verification in an FMCT?

(c) Managed access and proliferation-sensitive information: What types of managed access arrangements could be appropriate to ensure proliferation-sensitive or other sensitive information is not disclosed during some inspections? Might there be need for new thinking on managed access arrangements for FMCT verification including in relation to proliferation-sensitive information?

(d) Facility conversion and shutdown: What new verification ideas might be needed with respect to conversion of facilities previously used to produce fissile material for weapons use? How might FMCT verification provide assurance that facilities are no longer used for proscribed purposes?

IV. Concluding remarks and acknowledgements

21. This event provided a useful opportunity to engage in a general discussion on the possible parameters of FMCT verification, and through the verification experience of the IAEA and OPCW, to begin a closer consideration of how FMCT verification might be done in practical terms.

22. The presentations and discussions at this event demonstrated that developing the verification elements of an FMCT in practical terms will be challenging. This event also underlined the need in this experts side events process to maintain a focus on FMCT verification. In this context, Australia and Japan will co-host another experts side event on FMCT verification 30 May – 1 June 2011.

23. The Chair thanks the CD member and observer states which participated in this event and especially the experts who travelled to Geneva from capitals and Vienna for this event.

24. The Chair thanks Mr. Eric Pujol and Mr. Horst Reeps for their valuable presentations and engagement with participants at this event. The Chair also thanks the IAEA and the OPCW respectively for facilitating Mr Pujol's and Mr. Reeps' participation.

25. The Chair thanks Mr. Bruno Pellaud and Mr Malcolm Coxhead for their participation and contributions as Vice-Chair. The Chair expresses his gratitude to Switzerland, and in particular Mr. Jürg Lauber, Ambassador and Permanent Representative of Switzerland to the Conference on Disarmament, for facilitating Mr. Pellaud's participation.

26. Finally, the Chair thanks Japan, and in particular Mr. Akio Suda, Ambassador and Permanent Representative of Japan to the Conference on Disarmament, for co-hosting this event.
