

JAPAN

WORKING PAPER

FMCT: A CONTRIBUTION TO CONSTRUCTIVE DISCUSSIONS

Introduction: The Purpose of this Paper

1. This paper sets out several major issues of discussion on a Fissile Material Cut-off Treaty (FMCT) from the perspective of strengthening the disarmament and non-proliferation regime. It analyzes the existing international framework for nuclear material, as well as the current international security environment.
2. This paper aims to contribute to the promotion of more detailed and precise discussions on an FMCT, when the CD conducts further work on it. It does not, therefore, prejudice in any way Japan's position in future discussions or negotiations.

I. The Significance and Relevance of an FMCT

Significance and Relevance in Nuclear Disarmament and Non-Proliferation

3. Article 6 of the NPT stipulates the obligations of each of the Parties to the Treaty to pursue negotiations in good faith on effective measures relating to cessation of the nuclear arms race at an early date and to nuclear disarmament. In the preamble paragraph 12 of the NPT, it is desired to further the easing of international tension and the strengthening of trust between States “in order to facilitate the cessation of the manufacture of nuclear weapons, the liquidation of all their existing stockpiles, and the elimination from national arsenals of nuclear weapons and the means of their delivery.” These provisions show the aim of the NPT as the elimination of nuclear weapons, which requires measures such as the cessation of the manufacture of

nuclear weapons or the cessation of nuclear arms race. To this end, quality capping by comprehensively banning nuclear testing and quantity capping by banning the production of fissile material for nuclear weapons or nuclear explosive devices are both necessary and important.

4. As for the former quality capping, the CTBT has already been adopted, and the further promotion of its early entry into force is essential in this regard. For the latter, quantity capping should be achieved through the early commencement and conclusion of negotiations on an FMCT to ban the production of fissile material for nuclear weapons or nuclear explosive devices, as well as to ensure the non-reversion or non-diversion of fissile material for non-nuclear-weapon use to nuclear-weapon use. Like the two back wheels that propel a car forward, the early entry into force of the quality capping CTBT, and the early commencement and conclusion of negotiations on a quantity capping FMCT will realize “the cessation of the manufacture of nuclear weapons” and “the cessation of the nuclear arms race”, leading to an environment conducive to the future elimination of nuclear weapons.

5. This way of thinking was also recognized in the adopted “Principles and Objectives for nuclear non-proliferation and disarmament” of the 1995 NPT Review and Extension Conference. More specifically, the decision adopted the programme of action with three important nuclear disarmament measures for “the full realization and effective implementation of Article VI”: 1. the completion of the negotiations on a CTBT; 2. the immediate commencement and early conclusion of negotiations on an FMCT; and, 3. “pursuit by the nuclear-weapon States of systematic and progressive efforts to reduce nuclear weapons globally”. At the 2000 NPT Review Conference, the immediate commencement of negotiations on an FMCT with a view to their conclusion within five years was also listed as one of the 13 practical steps for nuclear disarmament. The nuclear disarmament resolution entitled “Renewed determination towards the total elimination of nuclear weapons” put forward by Japan at the 60th General Assembly of the United Nations last year also emphasizes the importance of the immediate commencement of negotiations on an FMCT and its early conclusion, and calls upon all nuclear-weapon States and States not parties to the NPT to declare moratoriums on the production of fissile material for any nuclear weapons pending the entry into force of the Treaty. The fact that the resolution was adopted by an overwhelming majority clearly demonstrates that the international community attaches great importance to an FMCT as a nuclear disarmament and non-proliferation measure.

6. The significance and relevance of an FMCT to the enhancement of national security should also be emphasized. In the current framework, there are no international legal regulations imposed whatsoever on fissile material for nuclear weapons. The fact that only four of the five NPT nuclear-weapon states presently observe moratoriums on the production of fissile material for nuclear weapons means that not all states possessing fissile material for nuclear weapons declare a moratorium. Moreover, the moratorium is nothing more than a unilateral political declaration. Making the moratorium a legal obligation through an FMCT, therefore, will have significant bearing on the improvement of the security environment for the non-nuclear-weapon states. Likewise, imposing restrictions on an arms race and ensuring the stability of the security environment also provides long term security benefits for the nuclear-weapon states and other states possessing fissile material for nuclear weapons. Accordingly, preventing greater increases in the amounts of fissile

material for nuclear weapons, as well as ensuring the irreversibility of nuclear disarmament measures by states possessing such fissile material through an FMCT production ban will be of enormous value.

7. Additionally, if the three States not parties to the NPT, which are currently not under international nuclear disarmament obligations, conclude an FMCT, it will be a major step forward for nuclear disarmament and non-proliferation. It will also be beneficial for those States not parties to the NPT, as they will be seen, if not full fledged, as acting as responsible members of the international community in regards to their disarmament and non-proliferation commitments.

8. Since an FMCT will be a non-discriminatory treaty, from the standpoint of a multilateral disarmament and non-proliferation regime, it will make easier the concerted efforts of the international community towards nuclear disarmament and non-proliferation for the improvement of international peace and security.

9. Lastly, the advancement of the negotiation on an FMCT will lead to the re-activation of the Conference on Disarmament (CD), the only multilateral disarmament negotiation forum.

The significance of an FMCT in relation to strengthening nuclear security

10. In addition to the fundamental significance inherent in an FMCT as outlined in the above paragraphs 3 to 9, under the current international security environment in which the possibility of nuclear material falling into hands of non-state actors is an emerging concern, the perspective of strengthening nuclear security can be added as a contemporary significance of an FMCT. In particular, under the current situation, against the backdrop of military confidentiality and national security reasons, basically there is no international regulatory framework for the military-use (nuclear-weapon use and conventional military use) nuclear material of the nuclear-weapon states and States not parties to the NPT (refer to the Matrix annexed to this paper). Although it will depend on the extensiveness of the possible verification measures (safeguards), if an FMCT obligates states parties to implement state accounting and control on nuclear-weapon-use nuclear material and to make voluntary declarations based on state accounting and control, the sections for the SSAC (State System of Accounting for and Control of nuclear material) and safeguards in the annexed Matrix related to the five nuclear-weapon states and three States not parties to the NPT will be strengthened. Furthermore, if physical protection and transfer ban obligations are newly realized under an FMCT, it would also contribute to meeting the current international needs for strengthening measures to prevent the diversion and proliferation of nuclear material. Likewise, from a nuclear security perspective, an examination of realizing in an FMCT new state accounting and control and physical protection obligations and voluntary declarations based on state accounting and control, as well as a ban or strict control on the transfer of materials for conventional-military use to a third country could also be beneficial. Such additional obligations will close more gaps in the Annex Matrix.

II. Major Issues

11. There are a number of pertinent issues that require discussion in relation to an FMCT, but this working paper will only focus on the 4 major issue areas: scope of core obligations, verification, stocks and definition.

Scope of core obligations

12. Various discussions conducted until now clearly show there is consensus that a ban on the production of fissile material for nuclear weapons or nuclear explosive devices would be the core obligation of an FMCT. Additionally, there is no doubt that fissile material for civil use should not be subject to a production ban under an FMCT.

13. Issues such as how to define “production” for a production ban of fissile material for nuclear weapons or nuclear explosive devices, or more specifically, whether to limit the scope of “production” to “future production” or to add “past production” which means to include “stockpiling” as a banned activity (in other words, imposing future reduction and elimination obligations) still remain open to debate. However, at a minimum, there is a broad consensus that “future production” is within the scope of an FMCT ban. As a logical consequence of a ban on “future production”, the entry into force of an FMCT would obligate the States Parties possessing production facilities for nuclear-weapon-use fissile material to close down or decommission such facilities, or convert them to non-nuclear-weapon use.

14. The “reversion” of such closed-down or decommissioned facilities back to production of nuclear-weapon-use fissile material should be subject to a ban, as such “reversion” would mean nothing less than de facto “production”. The “reversion” of fissile material that states possessing fissile material for nuclear weapons have voluntarily declared as excess for national security needs should similarly be subject to a ban.

15. Furthermore, the “diversion” of existing and future stocks for non-nuclear-weapon purposes to nuclear-weapon purposes after the entry into force of an FMCT should be subject to a ban, as such “diversion” would substantially be the same as “production”. Although the nuclear-weapon states under their “voluntary safeguards” may currently “withdraw” their declared civil nuclear material from IAEA safeguards, the conclusion of negotiations on an FMCT could necessitate changes to such safeguards agreement provisions between a nuclear-weapon state and the IAEA to conform with the FMCT obligations.

16. Receiving fissile material for nuclear weapons from another state should be subject to a ban under an FMCT, as such transfers would be equivalent to “production”.

17. An FMCT should also ban assisting another state in its production of fissile material for nuclear weapons.

18. Moreover, considering the contemporary significance of strengthening nuclear security, it might be worth looking at the possibility of realizing not only a production ban, but also obligations of state accounting and control and physical protection, as well as a ban on the transfer of stocks of fissile material for nuclear weapons.

Verification

19. There are many different approaches concerning the verification of the core obligation of a “ban on production of fissile material for nuclear weapons or nuclear explosive devices.” Arguments range from the opinion that verification is “unnecessary” to the opinion that all nuclear facilities, including civil use facilities, should be comprehensively verified. For the purpose of considering possible ways of verification regarding an FMCT, a more detailed examination of what we call “verification” in an FMCT, specifically what actions could be performed on which objects, would be beneficial.

20. The following are some of the possible ways for “verification” of the core production-ban obligation under an FMCT: (Note: As some view the below subparagraphs (iii) and (iv) different from the primary purposes of an FMCT, they need to be further studied in light of the expertise of the IAEA.)

- (i) Confirm that the amount of stock of fissile material for nuclear weapons or nuclear explosive devices has not increased from the date an FMCT enters into force.
- (ii) Confirm that the reactors and facilities for the production of fissile material for nuclear weapons or nuclear explosive devices that are closed down, decommissioned or converted to non-nuclear-weapon-use remain closed down, decommissioned or converted to non-nuclear-weapon-use.
- (iii) Confirm that fissile material that has voluntarily been declared as excess as a result of nuclear disarmament is not reverted back to nuclear weapons purposes.
- (iv) Confirm that fissile material for non-nuclear-weapon purposes has not been diverted to nuclear-weapon purposes.
(To be exact, non-nuclear-weapon purposes can be divided into civil purposes and conventional military purposes.)

21. Firstly, in order to confirm the above paragraph 20 (i), it would be necessary to declare all information regarding the types and amounts of such stocks that are the products of “past production”. Nevertheless, from various perspectives, for instance proliferation-sensitive information, it has been pointed out that it would be unrealistic to make such declarations mandatory, and this needs to be carefully examined. However, it would be worth examining the possibility of some kind of transparency-enhancing measure such as voluntary declarations. It should be noted here that even if such stocks are declared, as it is often pointed out, the “identification of production time” or the “identification of production purpose” would be difficult. In this manner, these extremely difficult technical issues, which can only be answered by states possessing nuclear-weapon-purpose fissile material, seem to obstruct paragraph 20 (i).

22. In relation to the above paragraph 20 (ii), after concluding an FMCT, fissile material production facilities for nuclear weapons in States Parties will inevitably be closed down, decommissioned or converted to non-nuclear-weapon use. Confirmation that those facilities, at least the facilities closed down, decommissioned or converted to civil use, will never again “operate” as production facilities for nuclear-weapon purposes is necessary and significant from the perspective of ensuring the core obligation of an FMCT. Moreover, the verification of this category would have the effect of substantially verifying a large part of paragraph 20 (i) and will be extremely important for improving the confidence in an FMCT.

23. In regard to the above paragraph 20 (iii), discussions are underway in the Trilateral Initiative between the United States, the Russian Federation and the IAEA. Examining the integration of paragraph 20 (iii) into an FMCT with reference to this initiative would also be significant from the perspective of legally ensuring “irreversibility”.

24. Taking some measures to confirm the above paragraph 20 (iv) in countries other than NPT non-nuclear-weapon States Parties is important. In this regard, based on the current situation in which “voluntary safeguards” are already applied in the NPT nuclear-weapon states and the facility-specific 66-type safeguards are applied to some of the non-NPT States Parties’ facilities, this issue should be left to the discussions in the IAEA. Since the NPT non-nuclear-weapon States Parties shall be covered by the conclusion of the NPT/IAEA comprehensive safeguards agreement and the Additional Protocol, they should not bear additional measures/obligations under an FMCT.

25. As for the non-diversion of fissile material for conventional military purposes to nuclear weapon purposes, even for the NPT non-nuclear-weapon states nuclear material can be the subject of exemption under Article XIV of the model Comprehensive Safeguards Agreement (153-type). It has been pointed out that including this concept in verification under an FMCT would be difficult for military confidentiality and national security.

26. As noted above, rather than general discussions on the necessity of “verification” in an FMCT, conducting more detailed examinations of each concrete category is important. In so doing, it is important to bear in mind the two primary goals of verification (namely, confirmation of each above category): the confirmation of non-diversion or non-reversion of declared activities; and, the confirmation of the non-existence of undeclared activities (i.e., the detection of undeclared activities). Therefore, for example, for a certain category, there may be difficulties in introducing verification measures, including the fact that detecting undeclared activities would be difficult. Irrespective of this, for other categories, the introduction of verification measures could be examined from the perspective of the significance and necessity taking into consideration the aims and objectives of an FMCT.

Existing stocks

27. Concerning the issue of whether to include “existing stocks” in the scope of an FMCT, it would be beneficial to discuss it based on what “existing stock” and “include in the scope” respectively mean under an FMCT. In addition to this, the perspective of strengthening of nuclear security could also be integrated into the discussions. The discussions on “existing stocks” could be examined according to the following categories:

- (i) First, as mentioned in paragraphs 12 to 18, the transfer of stocks for nuclear weapons to a third country should be banned. Although we have to wait until discussions converge on whether to include “a ban on stockpiling” (in other words, imposing future reduction/elimination obligations), it would be worth examining the addition of transparency-enhancing measures such as voluntary declarations based on state accounting and control, as well as the realization of physical protection obligations.
- (ii) Next, the diversion to nuclear-weapon purposes of stocks from conventional military use must be banned. It has been indicated that the verification of non-diversion is difficult from the perspective of military confidentiality. However, it would be possible to examine obligations not to transfer (or to strictly control) to a third country, voluntary declarations based on state accounting and control, as well as physical protection obligations from the perspective of strengthening nuclear security.
- (iii) As mentioned above, the “reversion” back to nuclear-weapon purposes of stocks declared as excess (nuclear-weapon use and conventional military use) should be banned. In addition, for stocks once declared as excess, it would be possible to examine realizing obligations to place under verification and to reduce and eliminate such stocks in the future.

Definition of “fissile material for nuclear weapons” (“fissile material” for civil purposes be excluded)

28. Before examining the definition of fissile materials for inclusion in an FMCT production ban, as mentioned in paragraph 12, it should be emphasized that fissile materials for nuclear weapons or nuclear explosive devices will be banned, while materials for civil purposes will be outside the scope of such a ban.

29. Based on such a premise, it can be said there is consensus that “special fissionable material” stipulated in Article 20 of the IAEA Statute— plutonium 239, uranium 233 and uranium enriched in the isotopes 235 or 233— are within the scope of “fissile material for nuclear weapons” under an FMCT. Inclusion of other material – transuranic elements (neptunium, americium), tritium and thorium – should be studied in detail by experts based on possible discussions in the IAEA.

III. Conclusion

30. An FMCT, as the next logical step to nuclear disarmament and non-proliferation, is significant in terms of prohibiting the “production” of fissile material for nuclear weapons or nuclear explosive devices. In order to achieve this aforementioned significance, an FMCT should include: a ban on the “reversion” of closed-down/decommissioned or converted (to non-nuclear-weapon use) production facilities that were once for nuclear-weapon purposes; a ban on the “reversion” of fissile material that was once for nuclear weapons but declared as excess for security needs; and a ban on the “diversion” from non-nuclear-weapon use to nuclear-weapon use. Prohibiting these activities will strengthen the irreversibility effect of an FMCT, which strives to firmly cap the quantity of fissile material.

31. In addition to nuclear disarmament, the relevance of an FMCT from the perspective of addressing the current pressing international security issue of strengthening nuclear security is becoming more and more significant. For this purpose, it might be constructive to examine the possibility of further obligations in addition to the production ban on fissile material for nuclear weapons (excluding “fissile material” for civil purposes), such as state accounting and control and physical protection, as well as a transfer ban on fissile material for nuclear weapon purposes.

32. While examining verification, in addition to the effectiveness of each category, the feasibility and achievability should also be taken into account.

Annex

Presence or Absence of an International Framework for Nuclear Material¹

		5 NPT Nuclear Weapon States	Non-NPT States Parties	NPT Non-Nuclear Weapon States (NNWS)		
Civil Use	SSAC	△	△	? ²		
	Safeguards	△(Voluntary safeguards)	△ (66-type Safeguards)	? (Comprehensive Safeguards) ³		
	Physical protection	? (Amended PP Convention) ⁴	? (Amended PP Convention) ⁵	? (Amended PP Convention) ⁶		
	Transfer Controls	? ⁷	? (NSG Adherence)	? ⁸		
Military Use	Conventional Military Use	SSAC	×	×	×	
		Verification	×	×	×	×
		Physical Protection	×	×	×	×
		Transfer Controls	×	×	×	×
	Nuclear Weapon Use	SSAC	×	×	N/A	
		Verification	×	×	N/A	
		Physical Protection	×	×	N/A	
		Transfer Controls	×	×	N/A	

- ? : international framework present
- ? : international framework partially present
- × : international framework not present

¹ This does not refer to the actual state of controls within each country, but the assessment of the presence or absence of an international framework for nuclear material.

² The implementation of national material accountancy (SSAC: State System of Accounting for and Control of nuclear material) is a prerequisite in applying comprehensive safeguards agreement.

³ This includes countries (such as Japan) for which the IAEA has drawn the broader conclusion and, as a result, has implemented the integrated safeguards.

⁴ The amended Convention on the Physical Protection of Nuclear Material, adopted in July 2005, stipulates new physical protection obligations for protecting nuclear facilities and material in peaceful domestic use, storage as well as transport, although it has still not entered into force. In the fourth revised document (1999) on The Physical Protection against the sabotage of Nuclear Material and Nuclear Facilities produced by the IAEA (INFCIRC/225), the physical protection of nuclear facilities was added. Furthermore, Article VIII of the Convention on Nuclear Terrorism (still not entered into force) adopted at the 59th Session of the UN General Assembly in April 2005, provides an obligation to make every effort to adopt appropriate measures to ensure the protection of radioactive material (including nuclear material).

⁵ Same as above.

⁶ Same as above.

⁷ Under UNSC Resolution 1540, UN Member States are obligated to enforce export controls. NPT States Parties are also obligated to enforce export controls based on Article III paragraph 2 (based on which the Zangger Committee has established the MOU). In addition to these, the NSG has established its Guidelines.

⁸ Same as above.

⁹ Stipulated in Article XIV of the Comprehensive Safeguards Agreement (153-type). However, there has been no case for invoking this article so far.

¹⁰ Between the US and Russia, there is the Trilateral Initiative with the IAEA.