



and Scientists Against Proliferation

Briefing
Paper

3

Martin B. Kalinowski

Cut-off and the NPT. A leverage to overcome the deadlock?

prepared for
NPT PrepCom
Geneva, 1998

sponsored by the
Nuclear Age Peace Foundation

Briefing Paper

Cut-off in the NTP review process.

Does a cut-off agreement offer a leverage to overcome the current deadlock between complete nuclear disarmament and non-proliferation?

■ Martin B. Kalinowski

Finding new and creative ways how to overcome the current deadlock in nuclear arms control and especially at the Conference on Disarmament (CD) in Geneva became the most important question in the past two years.

For long time it was expected that after the conclusion of the Comprehensive Test Ban Treaty (CTBT) the next step would be to ban the production of fissile materials for weapons purposes. In fact, a negotiating mandate for a verified agreement on a cut-off of production of nuclear-weapons-usable fissile material was agreed at the CD early in 1995. However, the negotiations never actually started. The prospects for getting into a successful negotiation process have even dimmed in the past 2 years and especially by failing to reach a consensus on the CTBT. No agreement has been reached yet to put the cut-off on the agenda of the CD.

It is important to address the particular conflict structure behind this deadlock. The conflict between the recognised nuclear weapons states and threshold states which hold out of the NPT is dominating the situation at Geneva. A similar conflict is appearing traditionally between the recognised nuclear weapons states and the states of the Non Aligned Movement (NAM) which joined the NPT as non nuclear weapons states. This second conflict dominates the NPT review process.

In a statement issued in August 1996 the NAM insisted on a linkage between

nuclear non-proliferation and disarmament as well as on a phased program for the elimination of all nuclear weapons within a fixed timetable.¹ However, the nuclear weapons states do not want other states to dictate the agenda for their own nuclear disarmament process. They feel that the five nuclear weapons states - and especially Russia and the USA - should agree among themselves on further disarmament which will be made dependent on the progress in non-proliferation and especially in satisfactory steps by nuclear threshold states to put their nuclear ambiguity under strict international control.²

The conflict at the CD has its implications for the NPT review process. Further significant progress beyond the current deadlock appears only to be feasible, if the conflict at the CD can be solved. The future of the NPT will be endangered, unless the promises given in the paper "Principles and Objectives" of the 1995 Review and Extension Conference are turned into action. Therefore, progress at the CD appears as precondition for a successful NPT review process. This dependence can also be reversed (see below).

In face of the current impasse regarding the cut-off at the CD in Geneva, three strategies are of utmost importance:

1. One is to make use of other multilateral fora to reach agreements between a limited number of states,

2. another is to agree on an international register of weapons-usable nuclear mate-

rial as an important and agreeable starting step for progress towards a cut-off agreement,

3. the third strategy is to identify steps which have equivalent impact on recognised and threshold nuclear weapons states. These strategies establish a complimentary approach to the proposed immediate start of negotiations towards a Nuclear Weapons Convention (NWC) which might serve as a framework for progress in both nuclear non-proliferation and disarmament in a reciprocal way.³

First strategy: Other fora.

Since the prospects for negotiating a cut-off agreement at the CD became unclear, other possible fora to reach relevant agreements are of increased importance:

- Talks on Guidelines for Plutonium Management at Vienna (to be continued on HEU)
- NPT Review Conference and related PrepComs
- Discussions among the five nuclear weapons states
- Discussions between the nuclear threshold and nuclear weapons states
- Bilateral talks between Russia and USA (Gore-Chernomyrdin committee)
- Bilateral talks between India and Pakistan
- Israeli-Arab peace talks

The goal of expanding the cut-off mandate to civilian materials is sometimes included in proposals for a Comprehensive Cut-off Convention (CCC).⁴ For this the recently concluded talks at Vienna regarding the Guidelines for Plutonium Management are of special significance, because this agreement touches the civilian weapons-usable materials in the five nuclear weapons states as well as Belgium, Germany, Japan, Switzerland and any other country that wishes to sign the guidelines as well. The aspect of agreement on common standards for the safe and secure handling of plutonium set aside, these talks were also seen as a chance to discuss possible commonly agreed restrictions on production and use of plutonium in order to decrease the proliferation dangers. For example the USA proposed the „zero stock“ approach which would imply a moratorium on plutonium reprocessing until all existing stocks of separated plutonium are im-

mobilised. This proposal was harshly rejected by France and the UK. Therefore, no limitations on the production and usage of plutonium in the civilian sector were agreed.

As a result of the first NPT PrepCom in April 1997, it was agreed that special time should be reserved in the further review process to discuss a ban on the production of fissile material for nuclear explosive devices. Thus, the NPT review process might become an important international forum to deal with the cut-off issue. The next opportunities are the second PrepCom which will take place from April 17 to May 8, 1998 in Geneva, and the third PrepCom which is scheduled for April, 12 to May, 23 1999 in New York. Both will play an important role in making progress with regard to future non-proliferation measures. Nuclear disarmament measures need to be included in these considerations (see below). Whereas nuclear disarmament has been judged at the first PrepCom in the usual fashion by observing the past achievements, the demand for inclusion of negotiations with the NPT member states on future measures was strictly denied by the nuclear powers.⁵

For further progress regarding restrictions on weapons-usable materials it is important to search for possibilities for unilateral steps, regional approaches, or bilateral agreements. For example India and Pakistan might start a bilateral process to put the nuclear ambiguity under control by addressing first tritium production because it appears to be the least delicate issue.⁶

Second strategy: Begin with an international register

In order to get things moving again, the efforts should first concentrate on the easiest and least demanding step to put all weapons-usable materials under international control. This is the establishment of an international register of inventories and production capabilities for all relevant materials. Amazingly, this demand addresses the most urgent step to be taken, though many analysts would at first glance complain that it would be a significant drawback to focus on material balances and leave further production uncontrolled for the time being. However, when analysing nuclear disarmament from the perspective of the final goal of a nuclear-weapon-free world it becomes apparent that this meas-

ure is actually the most important to assure at a later stage that there are no retentions of secret stockpiles of weapons-usable materials.

The incentive to withdraw nuclear weapons or related materials increases with progress in nuclear disarmament and is the highest when nuclear weapons are completely eliminated. The incentive is very low now. But successful, and undetected withdrawal is absolutely easy as long as no international registers are in place. Therefore, registration of all stocks should begin before the motivation for hiding material increases in order to achieve the highest possible⁷ trust and assurance for all future times that no material has ever been put aside. This measure is even more important than effective production bans and reductions of stocks. These steps not only require the registration as a basis for verification but would also increase the incentive for clandestine withdrawal as long as detailed registers are not in place.

All nuclear weapons and materials will have to be declared, detailed balances to be published and any changes have to be declared as well on a regular basis. Verification is not necessary at the beginning. When later physical inventory taking and other inspections are accepted, it will be possible to check the consistency with past declarations and any discrepancies will give reason to suspicions of hidden materials which will trigger special investigations. Therefore, it is of utmost importance to demand very detailed material balances. Figures should not be rounded on a scale larger than kilogram.

The international registration of weapons-usable materials is the step which is the easiest to achieve and, in fact, first actions have already been undertaken in this regard. The nine countries which participate in the International Plutonium Regime talks in Vienna have agreed in late 1997 to release annual plutonium balances. Though, this can be called a long desired progress which will bring at least a starting point for transparency on the amounts of plutonium. In the past, information of this kind have always been subject to confidential classification in most countries. However, the agreed common standard for these balances is much too weak. The data are aggregated on a very general level. Each country releases not more than a couple of figures which are rounded to 100 kg of plutonium.

At the NPT PrepCom meeting in April and May 1997, Norway has proposed a specific approach to take voluntary measures to increase transparency on holdings of weapons-grade fissile material. Such a confident building measure would facilitate negotiations on a cut-off treaty as well as any further talks on nuclear disarmament. To increase the international confidence in the correctness and accuracy of the reported data Norway suggested four specific measures:⁸

- „1. All nuclear capable states would submit information on their stocks, if any, of weapon-grade fissile material.
2. Cooperative international measures would be put into place in order to clarify and confirm these declarations.
3. The nuclear weapons states, or any state that submits information on holdings of weapons-grade fissile material, could permit inspection of such holdings. The aim would be to ensure that the inventory in storage can only be withdrawn for non-weapons purposes.
4. Agreed monitored net reductions from stockpiles could be envisaged.“

Third strategy: Identify equivalent steps

A clearly accepted demand is that a cut-off agreement should be non-discriminatory. Currently, the view is predominant that this would imply identical obligations for all states. For example, all states should stop the production of fissile material for weapons purposes or outside of safeguards. On the other hand it has to be taken into account that identical provisions may have different impact on the perceived national security interests of different groups of countries. A mandate at the CD which is in this sense discriminatory and any agreement based on such a mandate will not be acceptable to those states which see themselves in a disadvantage. Therefore, it is imperative to search for reciprocal measures which have equivalent impact especially on the five recognised nuclear weapons states and on the nuclear threshold states.

When looking from the perspective of going from very deep cuts down to a nuclear-weapon-free world one can get a more clear understanding of equivalent steps. The nuclear threshold states have a policy of nuclear ambiguity which means that they neither deny nor confirm whether

they actually have nuclear weapons. They are known to possess sufficient amounts of nuclear-weapons-usable material to produce a number of nuclear weapons. It is suggested here that never in the process towards a nuclear-weapon-free world shall these states be recognised as nuclear weapons states. When these states join the nuclear disarmament progress they should reduce the upper limit of their stocks of nuclear-weapons-usable materials while the recognised nuclear weapons states reduce further the limits of their nuclear arsenals. In the last step towards eliminating nuclear weapons the threshold states should surrender the remaining stocks of material while the nuclear weapons states surrender the remaining nuclear weapons. The complete surplus of nuclear material of the latter may be put under control at an earlier stage.

From this logic it becomes apparent that the reductions of stocks of weapons-usable materials in the two different groups of countries are not equivalent. Materials in threshold states should be regarded equivalent to nuclear weapon arsenals in recognised nuclear weapons states. Therefore, the mandate at the CD for cut-off negotiations cannot be made non-discriminatory by only including reductions of stocks from past production into the agreement. This is because the nuclear weapons states do not need further production of fissile materials and in general have already a production moratorium in place. On the other hand, the threshold states have the feeling that their nuclear options are significantly restricted especially if stocks from past production are included in the ban.

The only way of taking reciprocity serious is to aim at a cut-off agreement that includes both non-proliferation and disarmament provisions. Any measure that puts the unsafeguarded weapons-usable material and production facilities in nuclear threshold states under some sort of control serves per definition the goal of non-proliferation. Therefore, it is necessary to look for provisions which are clearly serving nuclear disarmament.

The only measure within an agreement on nuclear-weapons-usable materials that may have some impact on disarmament by the nuclear weapons states would be a control of further tritium production because fresh supplies of this material may be necessary some time early in the next century in the case that nuclear disarmament stops to keep pace with the natural

decay of this radioactive superheavy hydrogen isotope at 5.5% per year.⁹ Therefore, it is suggested here to take a ban on tritium production in recognised nuclear weapons states as a measure that is equivalent to an appropriate control of fissile materials in threshold states.

In the year 1988 a similar suggestion with the intention of using the decay of tritium as a forcing function for nuclear disarmament was discussed in the USA.¹⁰ This proposal was rejected on good purpose mainly with the argument that it would resemble the dog wagging its tail. If one tries to push nuclear disarmament by using the tritium decay as a forcing factor, then one is diverting the delicate negotiations about stockpile reductions. The proposal made here is significantly different from the one put forward earlier. If tritium is taken out of a nuclear weapon, it is made dysfunctional but it is still a nuclear weapon and this process is reversible.¹¹ Tritium can be introduced again into the same weapon. Therefore, this process can be viewed as taking nuclear weapons off alert for a longer time. It will take some time to get them on alert again. In the worst case it may take about a year to produce the required amount of tritium, depending on how long tritium was allowed to decay below the demand.

The advantage of such an approach is that a weak linkage is established between non-proliferation efforts directed against threshold states and disarmament measures addressing the recognised nuclear weapons states. This weak linkage avoids the seemingly unbridgeable gap between nuclear disarmament and non-proliferation. The linkage is weak because a ban on tritium production may never have a restricting effect on nuclear arsenals provided that independently conducted disarmament keeps pace with the decay of tritium. If START II is realised no tritium production is necessary for at least the next two decades. Thus, the decay of tritium provides a soft and - if perceived to be necessary, a reversible - time bound framework for nuclear disarmament and thus enables to achieve a compromise between the NAM states and the nuclear weapons states regarding such a demand.

Conclusion

Since nuclear arms control and especially negotiations at the Conference on Disarmament in Geneva appear to be

widely deadlocked, other international fora and unilateral measures in the direction of restricting the accessibility of nuclear materials for weapons purposes gain importance.

When analysing proposals on nuclear disarmament from the perspective of going towards a nuclear-weapon-free world one can clearly learn two lessons.

1. The most important step to be taken soon is the establishment of a detailed and complete international public register of nuclear weapons and nuclear-weapons-usable materials. Fortunately, this is the most easiest step to be taken to overcome the current deadlock in nuclear disarmament.

2. Any approaches to internationally further restrict the accessibility of nuclear materials for nuclear weapons purposes can only be achieved, if they are non-discriminatory in their effects on nuclear ambitions of both recognised and threshold nuclear weapons states. One possibility in this respect is to ban the production of tritium in nuclear weapons states. This bears the potential of solving the international conflict which is responsible for the deadlock at the CD. Besides of introducing a real disarmament provision into a cut-off agreement and overcoming the conflict between nuclear weapons and threshold states, this measure would at the same time be able to address the demand of the NAM states to agree on a time-frame for a phased elimination of all nuclear weapons. Thus, it may avoid the conflict between NAM and nuclear weapons states at the NPT review process.

As long as the nuclear weapons states are not prepared to include decisive disarmament measures into a cut-off agreement, the nuclear threshold states will never be prepared to negotiate such a treaty.

As long as the nuclear weapons states are not prepared to discuss such future disarmament measures within the NPT review process, a discriminatory situation in this important international forum can hardly be avoided.

References

1. On August 8, 1996, at the CD in Geneva the G-21 group of states tabled a „Programme of Action for the Elimination of Nuclear Weapons“ which Chile and South Africa did not support. See for example INESAP Information Bulletin No. 10, August 1996, page 47.
2. See M.B. Kalinowski, Nuclear powers reluctant to talk with other nations on nuclear disarmament within the NPT review process,

proffered paper, 47th Pugwash Conference, Lillehammer, Norway 1-7, August 1997.

3. A model Nuclear Weapons Convention was drafted by NGOs and launched on April 7 in New York. The drafting group was convened by the Lawers Committee on Nuclear Policy (LCNP) and technical assistance was provided by the International Network of Engineers and Scientists Against Proliferation (INESAP).

4 See for example W. Liebert, M.B. Kalinowski, Proposal for a Comprehensive Cutoff including civilian weapon-usable material, INESAP Information Bulletin No. 4, January 1995, pages 11-14.

5. See Kalinowski (1997), op.cit.

6. See P. Hoodbhoy and M.B. Kalinowski, The Tritium Solution, The Bulletin of the Atomic Scientists Vol. 52, July/August 1996, pages 41-44.

7. It should be noted that absolute assurance that no material has been diverted can never be given due to the large uncertainties which are inherent to accountancy of bulk material.

8. See conference room paper on cluster 1 presented by the Delegation of Norway during the first Preparatory Committee Meeting in April 1997 in New York.

9. M.B. Kalinowski, International Control of Tritium - A Technical Assessment of Measures for Nuclear Non-proliferation and Disarmament, forthcoming as volume 4 of the Science and Global Security Monograph Series (edited by H.A. Feiveson), Gordon and Breach Science Publishers: New York et al. 1998.

10. Nuclear Control Institute (NCI) and American Academy of Arts and Sciences (AAAS), The Tritium Factor - Tritium's Impact on Nuclear Arms Reduction, Washington/Cambridge 1988.

11. M.B. Kalinowski, The impact of complete elimination of tritium on a nuclear arsenal. Appendix A to M.B. Kalinowski, L. Colschen: International Control of Tritium to Prevent Horizontal Proliferation and to Foster Nuclear Disarmament, Science and Global Security 5 (1995) 187-196.

Dr. Martin KALINOWSKI studied physics in Muenster, Cambridge (UK) and at Aachen Technical University. He is working on nuclear arms control since 1989 with IANUS. His Ph.D. thesis in nuclear physics deals with international tritium control and was completed in 1997. Since 1996 he has been a member of the Coordinating Committee of INESAP.

INESAP briefing papers

prepared for the 2nd NPT PrepCom for the NPT Review Conf. in 2000, April 27 to May 8, 1998 in Geneva.

Sponsored by the Nuclear Age Peace Foundation

These briefing papers are distributed for free at the Geneva PrepCom to reach delegates, NGO representatives and the media.

No. 1/1998: *Beyond technical verification* (Martin Kalinowski, Wolfgang Liebert, Jürgen Scheffran)

No. 2/1998: *Multilateralising the nuclear disarmament process* (Owen Greene)

No. 3/1998: *Cut-off in the NPT review process* (Martin Kalinowski)

No. 4/1998: *Why Stockpile Stewardship is incompatible with the process of nuclear disarmament* (Andrew Lichtermann, Jacqueline Cabasso)

No. 5/1998: *Regional monitoring and verification system for a WMD/FZ in the Middle East* (F.H. Hammad)

Edited by:

Martin Kalinowski, IANUS
Darmstadt University of Technology
Hochschulstrasse 10
64289 Darmstadt, Germany

Phone: +49-6151-16-3016
(M. Kalinowski, W.Liebert)
-4468
(J. Scheffran)
-4368 (secretary)

Email:
kalinowski@
hrzpub.tu-darmstadt.de

WWW:
<http://www.tu-darmstadt.de/ze/ianus/inesap.htm>

Printed at: IANUS

Layout: Volker Hahn