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Policy Briefs

on the Implementation of the Treaty on the Non-Proliferation of Nuclear Weapons

Norwegian Institute of International Affairs
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Preface

The nuclear Non-Proliferation Treaty (NPT) is the backbone of an international regime comprising IAEA safeguards, security assurances for non-nuclear-weapon states, guidelines for nuclear supplies, provisions for protection of nuclear materials, export control mechanisms, nuclear weapon-free zones and other arms control measures. The Treaty links non-proliferation goals with nuclear disarmament obligations. Art VI obliges all member states to work for nuclear disarmament to zero.

The NPT entered into force in 1970. In retrospect, and despite setbacks, the overall impact of the Treaty has been significant and gratifying. However, its achievements have been hard won, and they are increasingly contested. Its continued success is by no means guaranteed. The UN Secretary-General's High-Level Panel on Threats, Challenges and Change warns, "we are approaching a point at which the erosion of the non-proliferation regime could become irreversible and result in a cascade of proliferation".

According to the NPT, nuclear weapons are temporarily legal in five countries (the five that had tested prior to 1 January 1967), not illegal in three others (Israel, India and Pakistan, which never joined the NPT) and forbidden everywhere else (North Korea's nuclear status is unclear). The continued lack of universality, and recent cases of non-compliance, put the Treaty under stress. Its enforcement mechanisms are weak.

Since the 2000 Review Conference, a number of new challenges to the non-proliferation regime have emerged. They have come from North Korea and Iran; from black markets in nuclear materials, equipment and technology; from threats of nuclear terrorism;

and from US policies adopting a selective view of the rights and obligations of the NPT and, generally, downgrading the significance of multilateral solutions. To deal with these developments, new approaches and measures to stem proliferation are being discussed. The upcoming Review Conference may therefore be more demanding than the previous ones.

This publication contains a set of policy briefs on ways to enhance the viability of the non-proliferation regime. Some of them address issues which have been considered throughout the history of nuclear arms control, but which remain unresolved. Others discuss recent initiatives which have not been discussed at previous Review Conferences.

The briefs have been written by contributors to "Halting Nuclear Proliferation in the 21st Century", an international project chaired by the Norwegian Institute of International Affairs and financed by the Norwegian Research Council.

Sverre Lodgaard
Director,
The Norwegian Institute of International Affairs (NUPI)

Oslo, April 2005

The Right to Withdraw From Arms Control Treaties

Jozef Goldblat
is Vice-President of the Geneva International Peace Research Institute (GIPRI). He is also Associate Editor of Security Dialogue, a journal published by the International Peace Research Institute, Oslo (PRIO), and Resident Senior Fellow at the United Nations Institute for Disarmament Research (UNIDIR) in Geneva.

In 2002, the United States withdrew from the Anti-Ballistic Missile (ABM) Treaty, which had been concluded with the Soviet Union in 1972. This was the first time in the post-Second World War period that an arms limitation agreement was unilaterally denounced. Less than one year later, North Korea withdrew from the 1968 Non-Proliferation Treaty (NPT).

In both cases, the withdrawing state referred to an escape clause, according to which, a state may annul its commitments under the treaty, and then, as a non-party, feel free to act contrary to the objectives of that treaty, without exposing itself to a charge of violation. All that the party must do is to state that some extraordinary events related to the subject-matter of the agreement have jeopardised the supreme interests of its country; and advance notice must be given of the withdrawal.

There is no need for other parties or an international authority to grant the approval of such a statement. The assessment of what event is "extraordinary", how the event is related to the subject-matter of the treaty, and to what degree the interests of the country in question have been affected, is left to the judgement of the withdrawing party. The 1967 Outer Space Treaty does not even require a statement of reasons for withdrawal.

Reversibility of Obligations

These vague, subjective formulations regarding the right to withdraw lend themselves to abuse. Thus, in withdrawing from the NPT, North Korea referred to US–South Korean military manoeuvres,

which it considered an immediate threat to its security – even though such manoeuvres had been conducted routinely for several years prior to the withdrawal. North Korea also found it unacceptable that the International Atomic Energy Agency (IAEA) wanted to carry out a special inspection of its nuclear facilities – even though acceptance of such an inspection is the obligation of all non-nuclear weapon parties to the NPT. In a joint statement, the depositaries of the NPT (Russia, the United Kingdom and the United States) questioned whether the reasons cited by North Korea justified its withdrawal.

In providing justification for its withdrawal from the ABM Treaty, the United States contended that several states and non-state entities had acquired, or were seeking to acquire, weapons of mass destruction, and that this posed a threat to US security – but it did not specify who these threatening actors were. Nor did the United States make it clear how systems designed to counter long-range strategic missiles, which it claimed necessary for defence, could protect its people from terrorist attacks.

Only the Anti-Personnel Mines Convention stipulates that a state must provide a full explanation of the reasons motivating its withdrawal from the agreement.

Evolution of the Right to Withdraw

The essential components of the withdrawal clause, as specified above, were agreed upon in 1963, during the negotiations for the Partial Test Ban Treaty (PTBT). The wording of the clause was a compromise reached between those who argued that a provision allowing unilateral withdrawal was unnecessary, because the right to withdraw was – in their opinion – implicit in the notion of state sovereignty, and those who insisted that the right to withdraw should be explicitly stated in the treaty. Since that time, the possibility to repeal legally contracted obligations has flawed nearly all arms control agreements.

Over the years, the 1963 formula has been modified with regard to the time required for withdrawal to take effect: from three months for the PTBT, the 1967 Treaty of Tlatelolco on the denuclearisation of Latin America, the 1968 NPT, the 1971 Seabed Treaty on the denuclearisation of the seabed and ocean floor, the 1972 Biological Weapons Convention (BWC) and the 1993 Chemical Weapons Convention (CWC); to 150 days for the 1990 Treaty on Conventional Armed Forces in Europe (CFE Treaty); to six months

for the 1992 Open Skies Treaty on the conduct of observation flights, the 1997 Anti-Personnel Mines Convention (APMC) and the 1996 Comprehensive Test Ban Treaty (CTBT); to 12 months for the Outer Space Treaty, the 1985 Treaty of Rarotonga on the denuclearisation of the South Pacific, the 1995 Treaty of Bangkok on the denuclearisation of Southeast Asia, and the 1996 Treaty of Pelindaba on the denuclearisation of Africa.

Also the list of institutions that must be notified by the withdrawing party has been expanded. In addition to the governments of the other parties, the list now includes the depositary (or depositaries) of the treaty in question, the UN Security Council, and – in the case of the CWC and the CTBT – also the Executive Council of the respective implementation organisations.

The obligation to notify the UN Security Council carries particular weight. If it should find that the withdrawal threatens international peace and security, the Security Council may resort to sanctions, including military sanctions. There is thus some dissuasive value inherent in the possibility of the Council's involvement. However, it does not appear likely that the United Nations would use force against a treaty-abiding non-nuclear weapon state which has decided to withdraw not in order to acquire nuclear weapons – for which it may not even have adequate means – but in order to demonstrate dissatisfaction with non-implementation of the basic stipulations of the treaty, or for other political reasons. One should also bear in mind that UN sanctions can be triggered by *any* threat to international peace and security, irrespective of whether a withdrawal takes place.

The evolution of the withdrawal clause has not altered the fact that arms control measures are easily reversible. During the negotiations for the CWC, attempts were made to tighten the conditions for withdrawal, but with no success.

Conclusion and Policy Recommendations

To radically improve the present unsatisfactory situation and ensuring that *pacta sunt servanda,* one would have to abolish the withdrawal clause altogether. Such action would be especially important for those treaties that ban the proliferation and/or possession of weapons of mass destruction.

If a treaty has no withdrawal clause, a state wishing to withdraw must establish – in accordance with the 1969 Vienna Convention on the Law of Treaties, generally considered to embody customary

international law – that the parties *intended* to admit the possibility of withdrawal, or that a right of withdrawal was *implied* in the nature of the treaty. Since intentions and implications are often difficult to establish, the right to withdraw from a treaty in the absence of a withdrawal clause would be significantly circumscribed, perhaps even impossible to apply. It may be noted that the 1977 Enmod Treaty prohibiting military uses of environmental modification techniques contains no withdrawal clause.

Alternatively, if the abolition of the relevant clause proved objectionable, the reasons for withdrawal would have to be unambiguously specified by the withdrawing state. The pertinence of these reasons could then be judged by a simple or qualified majority of all parties, if not by consensus. A precedent has been set by the Open Skies Treaty: if a party to this treaty announces its decision to withdraw, the depositaries are obliged to convene a conference of the parties, no more than 60 days after receiving such notice, in order to consider the effect of the withdrawal on the treaty.

However, a breach of a treaty by one of the parties should not be invoked as sufficient grounds for withdrawal by others – with the exception of bilateral treaties, which in such cases may automatically come to an end. The notice of withdrawal would have to be delivered at least one year in advance, as stipulated by the Vienna Convention. Such a delay would allow time for the complying states to attempt to persuade the state wishing to defect not to do so, and to prepare themselves to deal with the situation that could result from the withdrawal. Following the example of the APMC, withdrawal should not be allowed during an armed conflict, in which the withdrawing party is engaged. An arbitrary decision to withdraw would have to be regarded as a material breach, and should be treated accordingly.

These suggested modifications could be introduced in arms control agreements, beginning with treaties dealing with weapons of mass destruction, by means of an amendment or an additional protocol, preferably the latter. Negotiating such an important matter would certainly be a lengthy process. In the meantime, states might be invited to pledge unilaterally, perhaps on the occasion of review conferences, either not to take recourse to the withdrawal clause, or to resort to it exclusively under the restrictive conditions outlined above.

Many jurists and politicians consider the right to withdraw from a treaty, unilaterally and without restrictions, as a norm of international law. Some refer to the doctrine of *rebus sic stantibus*,

which makes a treaty inapplicable in case of an unforeseen and fundamental change of circumstances. While this doctrine may be valid for certain categories of treaties, such as treaties of alliance or friendship, it cannot apply to non-proliferation or disarmament obligations, especially those incorporated in multilateral treaties, the abrupt termination of which by one party may directly affect the security of many or all parties.

In any event, states cannot be prevented from giving up or restricting their right to withdraw from treaties, as they cannot be prevented from giving up the right to make reservations to treaties. If they are to be meaningful, arms control obligations must be made irreversible.

"Cessation of The Nuclear Arms Race" Envisaged by Article VI of the Non-Proliferation Treaty

Jozef Goldblat is Vice-President of the Geneva International Peace Research Institute (GIPRI). He is also Associate Editor of Security Dialogue, a journal published by the International Peace Research Institute, Oslo (PRIO), and Resident Senior Fellow at the United Nations Institute for Disarmament Research (UNIDIR) in Geneva.

Dr. Annette Schaper is a senior research associate in the non-proliferation programme at the Peace Research Institute Frankfurt. Dr. Schaper's main scientific interest is nuclear arms control and its technical aspects.

Under Article VI of the Treaty on the Non-Proliferation of Nuclear Weapons (NPT), signed in 1968, the parties have undertaken to pursue negotiations "in good faith" on the cessation of the nuclear arms race. This undertaking is meant to cover a package of measures, which – according to the negotiating history of the NPT – include bringing into effect a treaty prohibiting all nuclear weapon test explosions, as well as a treaty banning further production of fissile material for nuclear explosive purposes. None of these undertakings has been fulfilled.

The Comprehensive Test Ban Treaty (CTBT) can be regarded as a tool to cap the *qualitative* nuclear arms race – i.e. to hinder the development of qualitatively new nuclear explosives – whereas the planned Fissile Material Cut-Off Treaty (FMCT) can be seen as its *quantitative* counterpart, capping the amount of material available for new nuclear weapons. Together, these treaties would complement each other and curb further nuclear arms competition.

The Comprehensive Test Ban Treaty

In the course of the recent decades, three out of four international treaties dealing with nuclear explosions have entered into force. The multilateral Partial Test Ban Treaty (PTBT), signed in 1963, prohibits nuclear weapon tests in the atmosphere, in outer space and under water, but it does not prevent the nuclear- weapon powers from testing underground. The bilateral US–USSR/Russia Threshold Test Ban Treaty (TTBT), signed in 1974, prohibits underground

The text on the CTBT was written by Jozef Goldblat; the FMCT text by Annette Schaper.

nuclear-weapon tests with yields in excess of 150 kilotons (the equivalent of 150,000 tons of high explosive), but that threshold is too high to render the treaty meaningful. Another bilateral treaty, the US–USSR/Russia Peaceful Nuclear Explosions Treaty, signed in 1976, regulates explosions carried out by the parties at locations outside their nuclear-weapon test sites and therefore presumed to be for peaceful ends, but it has no arms control value.

Unlike the above three treaties, which have merely circumscribed the environment in which testing is allowed and limited the size of the permitted explosions, the fourth treaty, the Comprehensive Test Ban Treaty (CTBT), signed in 1996, prohibits *any* nuclear explosion at *any* place. However, the CTBT is not yet in force. It may become effective only after the deposit of instruments of ratification by 44 states operating nuclear power or research reactors. So far, no more than three states possessing nuclear weapons – France, Great Britain and Russia – have ratified the treaty. China pledged to ratify the CTBT a few years ago, but has not yet done so, whereas the United States has rejected the treaty altogether. The moratoria on nuclear testing proclaimed by some of the signatories are not legally binding and may be abandoned at any time.

If an emerging nuclear-weapon state decides to test a newly developed nuclear device, it may do so chiefly to demonstrate that it has acquired a workable nuclear weapon and claim special international status. This is what has happened with India and Pakistan. When a nuclear-weapon power conducts test explosions, it does so primarily to validate modifications in the existing designs of nuclear warheads. The main purposes of these – often sophisticated – modifications are to achieve greater efficiency in the use of fissionable and fusionable material and to increase the yield-to-weight ratio. The modifications may make the weapon assembly compatible with missiles and other means of delivery, as required by current military needs. Simulation with supercomputers cannot meet all these objectives. Warheads of designs not tested through explosions are not deemed sufficiently reliable to be deployed. Technical experts and military establishments of the nuclear-weapon powers consider it indispensable to have at least one explosion of a new or significantly re-designed warhead at or near full yield.

Testing is needed not only to modernise the first two generations of nuclear weapons – the fission and fusion explosive devices – but also to develop new and third-generation nuclear weapons. The latter constitute a refinement of the techniques involved in fission/fusion processes for the purpose of achieving special weapon effects,

such as enhanced electromagnetic pulse or enhanced radiation. Cessation of nuclear testing will therefore bring to a halt substantial qualitative improvements of nuclear weapons. The CTBT will make it very unlikely that something completely new and exotic will emerge in the nuclear field.

Critics of the CTBT, predominantly in the United States, have held explosive testing to be necessary for maintaining the reliability, safety and security of their nuclear warheads. Today, however, the science-based Stockpile Stewardship and Management Program of the US Department of Energy, worked out in collaboration with the Strategic Command and the Joint Staff at the US Department of Defense, has the task to ensure the reliability and safety of nuclear warheads without further nuclear testing. A report by the US National Academy of Sciences affirms that the reliability of nuclear warheads can be ensured by visual and electronic examination of warheads disassembled in the course of routine maintenance operations and possible correction or replacement of faulty components.[1]

The tests already conducted have ensured an adequate degree of safety of US nuclear weapons. The security is provided by the so-called permissive action links (PALs) that permit the use of nuclear weapons *only* by authorised personnel. There are in place dependable use-denial mechanisms that will disable the weapons if non-authorised persons, such as terrorists, should attempt to employ them. Improvement, meant to render the weapons even more secure, does not require explosive testing.

Other critics of the CTBT question the verifiability of a total cessation of testing. However, when transmitting the CTBT to the US Senate, President Clinton stated that he viewed the treaty as "effectively verifiable". Indeed, to detect evidence of possible nuclear test explosions, the International Monitoring System for the CTBT will comprise facilities for seismological, radionuclide, hydroacoustic and infrasound monitoring, as well as the respective means of communication. When the system becomes complete, more than 85 countries will host 321 monitoring stations. In addition, parties to the CTBT may use national technical means of verification, including satellite imagery. Suspicious events that cannot be clarified by other means may be subject to on-site inspection.

The report by the US National Academy of Sciences holds that the CTBT verification machinery will have a "high probability" of detecting tests of one kiloton or more in all environments. Countries with little nuclear experience will not be able to test below this threshold in a way that would advance their know-how, whereas

for countries with extensive nuclear experience the returns on such testing would be minimal. Furthermore, the task of international monitoring will be facilitated by the fact that most purposes of nuclear testing – in particular, the development of new weapons – require more than one test. In case of suspicion, on-site inspections could identify tests far below one kiloton.

Still other critics of the CTBT want to test new small, low-yield tactical nuclear weapons and weapons that are more suitable for the destruction of deep, hardened underground facilities. To them, questions of reliability, safety, security and verifiability may serve as pretexts for the resumption of nuclear test explosions.

For the cause of inhibiting the proliferation of nuclear weapons, the CTBT does not carry the same significance now as it would have carried in the early years of the nuclear age. Today, any state with an indigenous modern technological base and/or the ability to buy the necessary technology can manufacture, without testing, a fission atomic device of a relatively simple design (although of uncertain yield), with a high degree of confidence that the device will work. Thermonuclear devices are more complicated. Developing them without testing would be very difficult, though not impossible. However, there can be no certainty that such non-tested devices will function as envisaged.

In any event, the CTBT will act to constrain nuclear proliferation. By imposing the same prohibition on testing on all parties, it will lessen the asymmetry between the rights and obligations of the nuclear "haves" and the rights and obligations of the nuclear "have nots".

There has been controversy over the admissibility under the CTBT of "sub-critical" experiments. In these experiments, chemical high explosives expose nuclear weapon material to high pressures. As a consequence, some atoms of the material undergo fission, but no self-sustaining fission chain reaction occurs. Among the states possessing nuclear weapons, at least the United States and Russia are engaged in such activities. Since sub-critical experiments do not produce nuclear explosions, they are not prohibited. However, their conduct may contribute to the qualitative improvement of nuclear weapon designs, which contradicts one of the chief purposes of the CTBT as defined in its preamble.

The Fissile Material Cut-Off Treaty

Although the proposal for a Fissile Material Cut-Off Treaty (FMCT) has been supported by many UN resolutions, it has never had the same standing in the process of nuclear disarmament negotiations as a CTBT. This is not because it is less essential for nuclear arms control and disarmament than a test ban. Rather, it is because an FMCT is more closely entangled with civilian commercial interests. Besides, fissile material production is not a spectacular unambiguous activity, like nuclear testing. Media coverage and public attention are therefore rather low.

The target states of an FMCT are the nuclear-weapon states, parties and non-parties to the Nuclear Non-Proliferation Treaty. Non-nuclear weapon states are already de facto FMCT compliant through safeguards agreements concluded with the International Atomic Energy Agency (IAEA).

The potential benefits of an FMCT are well known: it would limit the number of nuclear weapons possible to produce; it would reduce discrimination within the non-proliferation regime; it may contribute to nuclear disarmament; and it could introduce verification measures in states not currently subjected to full-scope IAEA safeguards, i.e. nuclear-weapon states and non-NPT states, thereby further diminishing the dangers of proliferation. It would, moreover, give a push to other initiatives aimed at similar goals, such as international collaboration in ensuring the security of fissile material.

However, after a successful exchange of views and the adoption of a compromise-negotiating mandate in 1995, the initial hope that a draft FMCT would soon be worked out was frustrated. The Conference on Disarmament (CD) has remained stalemated for years, and no FMCT negotiations have taken place. The major reasons for this situation are not directly linked to the substance of the treaty, however. Rather, the explanation must be sought in the fading interest of some major players in multilateral arms control; a possible weaponisation of space; and the lack of genuine nuclear disarmament. Furthermore, effective, verifiable implementation of the FMCT has proven far more complex than it had seemed to many of its early proponents.

One reason for the complexity is the scope of the ban; another concerns the verification of compliance. It is still not clear whether the scope will cover only future production of weapons-usable material, or whether previously produced material will also be included. The latter proposition has been rejected by the nuclear-weapon states. Several variations are possible. Declarations of stocks of pre-

viously produced material could be issued by the respective target states. Excess material which has been transferred to civilian use or for final disposal could be submitted to IAEA safeguards. A future FMCT could, moreover, include provisions and principles for the secure handling and control of all stocks of fissile materials.

Verification of an FMCT has been a subject of dispute as well. Several approaches are possible regarding the materials and facilities that should be covered by verification. Some of these materials may be directly used for nuclear weapons – namely, plutonium and highly enriched uranium (HEU). Others need to be technically processed before they can be used, such as low-enriched uranium that must be further enriched. Plutonium needs to be separated from spent fuel.

The task of verification would be to create assurances that no party produces or diverts nuclear material for illicit purposes. This is almost the same task as that of verification in non-nuclear weapon states under the NPT. Under an FMCT, the principal difference would be that, while in the non-nuclear weapon states all nuclear materials are safeguarded, the nuclear-weapon states might eventually be allowed a "black box" of previously produced material. Even if the scope of the treaty were very limited, e.g. if it contained only a ban on future production, it would be necessary to ensure that material produced in the future was not falsely declared as "earlier production". Since unsafeguarded civilian materials could be declared as earlier production and then put to military use, *all* civilian and military material produced after entry into force of the treaty would need to be put under safeguards.

Since the NPT and the FMCT verification tasks are almost the same, their verification should have the same verification standards. This circumstance was probably not anticipated by the original proponents of an FMCT. In international forums, some states, including the USA and a few other nuclear weapons possessors and initial supporters of an FMCT, advocated instead a minimalist verification scenario, also termed "focused approach". This approach envisages verification of only those facilities that are capable of reprocessing and enrichment – i.e. producing unirradiated plutonium or HEU. In this regime, other facilities such as reactors would not be monitored. This would be far less intrusive but also less effective than verification under the NPT.

However, even a focused FMCT approach should be welcomed as progress in nuclear arms control. For the first time, the states possessing nuclear weapons would acknowledge that production of

fissile material for nuclear weapons is not only their national affair, but also a matter of international obligations. As a consequence, the quality of protection, control and accountancy of relevant material would have to be sufficiently high to satisfy international requirements. The same requirements apply to non-nuclear weapon states with civilian nuclear industry, where all nuclear facilities are subject to verification. Compliance with the NPT is a matter of worldwide concern.

A more intrusive – and more reliable – verification scheme would encompass a larger fraction of states' nuclear activities. Such a scenario could include comprehensive material accountancy within the target state. Verification at former production facilities would be a major achievement. However, the need for strict verification does not seem to be shared by all nuclear-weapon states. In July 2004, the Bush Administration announced that it considered the FMCT to be unverifiable. This means that the USA does not see a way to design a treaty that would be guarded against cheating. Therefore, it now wants to negotiate a treaty without any verification. This contradicts its previous position, when the United States insisted that verification was not only possible, but also indispensable.

Conclusion

Significant progress towards the elimination of nuclear weapons is unlikely as long as nuclear test explosions have not been definitively and universally banned, and as long as the production of fissile materials for nuclear explosive purposes has not been prohibited. To prevent further nuclear proliferation, it is imperative that the CTBT enter into force without further delay, and that an FMCT be concluded with strict and effective verification provisions, as required by the Decision on Principles and Objectives for Non-Proliferation and Disarmament, adopted by the 1995 NPT Review and Extension Conference, and the plan of action adopted by the 2000 NPT Review Conference.

For both the Comprehensive Test Ban Treaty and the Fissile Material Cut-Off Treaty, effective verification is technically feasible. The obstacles are political in nature.

Endnotes

1 US National Academy of Sciences, "*Technical Issues Related to the Comprehensive Nuclear Test Ban Treaty",* Report by the Committee on Technical Issues Related to Ratification of the Comprehensive Nuclear Test Ban Treaty, Committee on International Security and Arms Control, US National Academy of Sciences (NAS), released July 31, 2002, http://www.nap.edu/html/ctbt.

Tactical Nuclear Weapons

Alistair Millar
is Vice President and Director of the Washington DC office of the Fourth Freedom Forum. He has written numerous articles, reports and book chapters on nuclear weapons issues.

Thousands of tactical nuclear weapons (TNWs) – many with yield capacity greater than the atomic bombs dropped on Japan in 1945 – were deployed for battlefield use during the Cold War and still exist today.[1] Also referred to as "battlefield" nuclear weapons, "mini-nukes", "sub-strategic", or "non-strategic" nuclear weapons, TNWs are regularly overlooked in arms control negotiations and have never been the subject of a formal international treaty. The need for more stringent control of these weapons is urgent and presents a challenge to the Nuclear Non-Proliferation Treaty (NPT).

The rise of international terrorism highlights the potential dangers of existing TNW arsenals. As many are relatively small and portable, they are more vulnerable to theft than other nuclear weapons.[2] Efforts to upgrade or develop entirely new types of these weapons may also undermine international security. Changing military doctrines – most notably in the United States and to some extent in the Russian Federation – indicate that old and new models of TNWs may become more incorporated into military planning and strategy, with the notion of usable nuclear weapons gaining greater currency among defence planners in both countries.

This brief provides background on the challenges that existing TNW arsenals and the possible development of new models of these weapons present to the non-proliferation regime. It takes stock of the progress made on this issue since the 2000 NPT Review Conference and concludes with a set of policy recommendations for reducing the threat from this neglected class of nuclear arms.

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Defining Tactical Nuclear Weapons

All nuclear weapons are subject to eventual elimination under the terms of the NPT. However, distinctions made in the Cold War years between different classes of these weapons continue to complicate matters. Factors such as range, target, yield, ownership, and delivery vehicle can affect whether a weapon is considered to be "strategic" or "tactical". TNWs tend to have a lower yield and shorter range and are intended for use against military targets, but there are numerous exceptions. Depending on the criteria selected for determining what a TNW is or which specific weapons or delivery systems would be subject to control, some weapons may be "strategic" in one context but "tactical" in another.

For example, the limited range of China's nuclear forces may make them "tactical" by US standards, but proximity to Russia could classify them as strategic according to Russian perceptions.[3] Similar problems arise in other contexts, such as India and Pakistan, as well as other current or aspiring nuclear states.[4] Attempts to address TNWs in analyses of security or arms control inevitably encounter such complications. In the context of the NPT, it is much less confusing to define TNWs as *non-strategic weapons,* that is, by distinguishing TNWs from treaty-limited strategic nuclear weapons.[5]

Table one: Estimates of World TNW Forces

Country	Deployed TNWs[6]
Russia	~3,000–4,000
United States	~1,000 (approximately 500 of which are in Europe)[7]
China	400
Israel	~200
France	60–80
India	~60
Pakistan	15–48
United Kingdom	0–200[8]

Multilateral Initiatives

The New Agenda Coalition (NAC) of Brazil, Egypt, Ireland, Mexico, New Zealand, South Africa and Sweden has had significant impact at the United Nations on the issue of verification and control of tactical nuclear weapons within the NPT agenda.[9] The Final Document from the Sixth NPT Review Conference in 2000 reflected agreement among all NPT States Parties on the need to reduce TNWs, calling for "further reduction of non-strategic nuclear

weapons, based on unilateral initiatives and as an integral part of the nuclear arms reduction and disarmament process". The NAC has continued to apply pressure on this point in the UN First Committee and the UN General Assembly (UNGA). In 2003, the UNGA adopted Resolution 57/58, titled "Reduction of non-strategic nuclear weapons", submitted by Ireland on behalf of the NAC.[10]

From 2002 to 2004, several working papers by individual states and groups of states have set forth proposals for moving these issues forward within the NPT.[11] Austria, Sweden and Ukraine, for example, produced a working paper at the 2004 PrepCom on "Reductions of Non-Strategic Nuclear Weapons", with nine succinct recommendations for reducing and enhancing the security of TNWs, for the 2005 Review Conference.[12] One major point addressed in the working paper and in the NAC resolutions underscores "the importance of preserving, reaffirming and implementing the 1991 and 1992 Presidential Nuclear Initiatives" (PNIs).

Unilateral Initiatives

Uncertainties surrounding the implementation of the PNIs and the qualities of the agreements themselves leave this entire class of nuclear weapons still largely unmonitored and uncontrolled.[13] As with unilateral arms control initiatives in general, these agreements are not legally binding. They do not provide any means for data sharing and verification, thereby leaving implementation of the agreement and remaining stockpile levels uncertain. They do not limit research and development into other similar, newer or related weapons systems. They provide no way of assuring the public that any reduction is actually taking place. They are vulnerable to changes in other international agreements and shifts in strategic relations or international attitudes that may undercut long-term commitment to the terms of the agreement.[14]

Information from Russia on the extent to which it has fulfilled its PNI commitments has been very sparse. At the 2000 NPT Review Conference, the Russian Foreign Minister stated publicly that his country had nearly completed implementation of the PNIs; but, two years later, contradictory Russian statements indicated that the process would not be completed until some future date, and only provided funding was available. In May 2004, Russia announced that half of its total arsenal of sea-based and naval aviation tactical nuclear warheads had been "liquidated".

The most recent comment on the situation came in October

2004 in response to a comment by US Assistant Secretary of State, Stephen Rademaker, who asserted: "the Russian side has not fully met its commitments to reduce TNWs in Europe". The Russian response illustrates how precarious unilateral initiates are in comparison to codified arms control treaties, as the spokesman for the Russian Ministry of Foreign Affairs noted that it was "incorrect" to refer to the PNIs as commitments, and that they should be seen rather as "a goodwill gesture on the part of Russia". [15]

NATO and Russia

A few individual NATO member-states have expressed their own concerns as well. During the General Debate at the First Committee of the UN in October 2001, Norway stressed the need for further reductions in tactical weapons and called for increased transparency and dialogue on this important subject, adding that "NATO recently proposed a set of transparency measures to Russia".[16]

The set of measures referred to by the Norwegian ambassador were proposed by NATO in a December 2000 report titled "Options for Confidence and Security Building Measures (CSBMs): Verification, Non-proliferation and Arms Control".[17] The document was the result of the agreement, reached at NATO's Washington Summit in April 1999, to conduct an internal review of its nuclear weapons policies, with specific attention to the adoption of CSBMs. This review became informally known as the *Paragraph 32 Process,* referring to the relevant paragraph of the NATO summit communiqué. The NATO report had more to say on the issue of Russian tactical nuclear weapons than any previously released publicly available document from NATO. "Given the extensive Russian nuclear arsenal", the report called for the following "specific CSBM proposals to enhance mutual trust and to promote greater openness and transparency on nuclear weapons and safety issues:

A. Enhance and deepen dialogue on matters related to nuclear forces.
B. Exchange information regarding the readiness status of nuclear forces.
C. Exchange information on safety provisions and safety features of nuclear weapons.
D. Exchange data on US and Russian sub-strategic nuclear forces."

In the report, NATO also noted that "this proposal would involve conducting a reciprocal data exchange with Russia within the Permanent Joint Council (PJC) context". The objective would be to enhance transparency and knowledge of the size of the US and Russian stockpiles. In the late 1990s, NATO and Russia exchanged information about their tactical nuclear weapons. NATO was also invited to observe a Russian military exercise in August 2004 that focused on defending nuclear weapons convoys from terrorist attacks – but staging visual events without exchanging data has done little to assure NATO that Russia's weapons are accounted for and safe.

NATO found it increasingly difficult to argue that TNWs were needed to provide a counter-balance to Soviet conventional superiority. As a consequence, the numbers of NATO weapons were reduced in the immediate post-Cold War period. However, the political significance attached to the remaining weapons is still essentially the same as it was during the Cold War.

NATO has no plans to remove its dual-capable aircraft or the approximately 500 US gravity bombs that remain in Europe. The ongoing presence of these weapons raises questions about the commitment of NATO members to Article VI of the NPT. NATO expansion has also raised concern about the roles of new member states in the planning of allied nuclear missions.

Developing New Roles for TNWs

In the United States, government officials have heeded calls from advocates within the defence establishment and nuclear weapons laboratories for the development of new models and lower-yield versions of TNWs. In 2002, the Bush Administration conducted an NPR, which did not offer any immediate changes to existing US and NATO TNW stockpiles. Instead, the NPR focused on new, low-yield weapons and weapon designed to destroy hardened targets (HDBT).

In 2003, the Congress granted the Administration's request to repeal a decade-old prohibition on research and development of such weapons by the nuclear weapons laboratories. Recent requests for funding for these new weapons have been refused by the US Congress, but a memo sent by Defense Secretary Donald H. Rumsfeld to Energy Secretary Spencer Abraham in December 2004 asked that the next budget include funds to resume study on bunker-buster nuclear weapons.[18]Among proponents of these weapons, there is

debate about whether such new TNWs would have to be tested in order to determine their efficacy.

Russia has increased its reliance on TNWs as part of its revised military doctrine and strategic concept.

A marked deterioration in conventional forces in the past two decades has prevented Russia from keeping up with high-tech advances made by the militaries of the USA and other Western countries. As a response to the conventional advantage of the West and the so-called "Revolution in Military Affairs", TNWs represent an appealing and cheap alternative for the maintenance of Russian security. In the late 1990s, Russia responded to the first post-Cold War round of NATO enlargement by issuing statements of intent to build up its tactical nuclear forces.

Policy Recommendations

- Build on the PNIs and past START III negotiations to implement a legally binding, verifiable and irreversible reduction and elimination of all TNWs covered by the PNIs. Plans to modernise TNWs should be abandoned.
- Take steps to reduce the risks associated with TNWs. Measures to reduce their readiness status should also be a priority. De-mating warheads and delivery systems would make it easier to verify that these measures have been taken.[19]
- Build on the Strategic Offensive Reduction Treaty (SORT) to make reductions in tactical and strategic nuclear weapons irreversible and verifiable.[20]
- All Russian TNWs, wether destined for deployment or dismantlement, should be consolidated into fewer, centralized storage facilities.
- NATO should review and update its "Options for Confidence and Security Building Measures (CSBMs), Verification, Non-proliferation and Arms Control" document in light of changes in the security environment over the past five years.
- Establish regular data exchanges as part of the CSBM process. The NATO-Russia Council should issue a report on what it has done to address this issue since the Council was created three years ago. Primary goals here should be accurate accounting and adequate safeguards for TNWs, including a baseline inventory of these weapons, with sufficient transparency to assure each other that these weapons are being handled in a safe and secure manner. This should include a pledge from the USA and NATO

to increase transparency with regard to their nuclear weapons capabilities and the implementation of agreements pursuant to Article VI, and, as a voluntary confidence-building measure, to support further progress on nuclear disarmament.

- NATO should make concrete assurances, beyond statements of its intention and plans, that it will not deploy nuclear weapons on the territory of more member-states.
- All the US nuclear weapons in Europe should be withdrawn. Today, the United States is the only state deploying nuclear weapons on the territory of others.

Endnotes

1 Estimates by the Nuclear Resources Defense Council indicate that there are nearly 2,000 US tactical gravity bombs and Tomahawk-N cruise missiles suitable for submarine launchers: see Robert S. Norris and Hans M. Kristensen, "Nuclear Forces 2005", *Bulletin of the Atomic Scientists* vol. 61:1, January/February 2005, pp. 73–75 www.thebulletin.org/article_nn.php?art_ofn=jf05norrisr. Estimates for Russia are much less certain. Norris and Kristensen believe there are around 3,400; other estimates are as high as 8,000 and are summarised in Andrea Gabbitas, "Non-Strategic Nuclear Weapons: Problems of Definition", in Larsen and Klingenberger eds, *Controlling Non-Strategic Nuclear Weapons: Obstacles and Opportunities,* US Air Force Institute for National Security Studies, July 2001, p. 25.

2 For additional discussion of the risks of illicit or accidental use, see Harald Müller and Annette Schaper, "Definitions, Types, Missions, Risks and Options for Control: A European Perspective", in William Potter, Nikolai Sokov, Harald Müller, and Annette Schaper, *Tactical Nuclear Weapons: Options for Control* (Geneva: The United Nations Institute for Disarmament Research, 2000), pp. 38–39.

3 George Lewis and Andrea Gabbitas, *What Should Be Done about Tactical Nuclear Weapons?,* The Atlantic Council of the United States, http://www.acus.org/publications/occasionalpapers/internationalsecurity/tacnukes41.pdf

4 See Timothy Hoyt, "The Buddha Frowns: Tactical Nuclear Weapons in South Asia", pp. 95–109 in Alexander and Millar, eds, *Tactical Nuclear Weapons: Emergent Threats in An Evolving Security Environment* (Washington, D.C.: Brassey's, 2003).

5 Despite a history of disagreements on terminology, NATO and Russia agreed to a glossary of terms in June 2001 that described nuclear forces as "A collective term for the armed services, arms or branches, major formations, tactical formations and units equipped with nuclear weapons, whether strategic or tactical. In the Russian Federation, nuclear forces include the Strategic Missile Forces, strategic aviation, submarines armed with nuclear ballistic missiles and all major formations, tactical formations and units equipped with sub-strategic nuclear weapons". See *NATO–Russia Glossary of Contemporary Political and Military Terms Revised* 28 May 2002 http://www.nato.int/docu/glossary/eng/index.htm.

6 Adapted from a table produced by the Nuclear Threat Reduction Initiative using data from the Center for Defense Information and Natural Resources Defense Council.

7 The estimate of 480 nuclear weapons in Europe has been revised upwards from previous accounts of around 200 weapons; see Hans M. Kristensen, "U.S. Nuclear Weapons In Europe: A Review of Post-Cold War Policy, Force Levels, and War Planning", Natural Resources Defense Council, February 2005. http://www.nrdc.org/nuclear/euro/contents.asp. A "senior military official in Europe" was quoted "in response to the Kristensen revised estimate as saying the number [was] 'around 200', and had been 'significantly reduced' in recent years." Eric Schmitt, "Up to 480 U.S. Nuclear Arms in Europe, Private Study Says", *New York Times,* 9 February 2005, p. A6.

8 There remains a possibility that some UK nuclear weapons could perform a sub-strategic

mission, limited since 1998 to only submarine-based delivery systems. The "British declared that the sub-strategic role would instead be taken over by a portion of the warheads on Trident II SLBMs on Vanguard-class SSBNs", Hans Kristensen Ibid, part II page 11, citing NATO Press Communiqué Press Communiqué M-DPC/NPG-1(95)57, "Final Communiqué", 8 June 1995, paragraph 23. According to the Natural Resources Defence Council, if the UK has a sub-strategic posture, "Trident II SLBMs already have a single warhead and are assigned targets once covered by WE177 gravity bombs. Therefore it follows that when *Vigilant* is on patrol, 10, 12 or 14 of its SLBMs may carry up to three warheads per missile, while the other 2, 4 or 6 missiles may be armed with just one warhead. There is some flexibility in the choice of yield of the Trident warhead. (Choosing to only detonate the unboosted primary could produce a yield of 1 kiloton or less. Choosing to detonate the boosted primary could produce a yield of a few kilotons). With these two missions a SSBN would have 36–44 warheads on board during its patrol." See Robert S. Norris, William M. Arkin, Hans M. Kristensen, and Joshua Handler, "British Nuclear Forces 2001", *The Bulletin of the Atomic Scientists,* vol. 57:6, November/December 2001, pp. 78–79.

9 The New Agenda Coalition submitted to the First Committee a resolution "Reduction of non-strategic nuclear weapons" (A/C.1/58/L.39/ Rev.1) in November 2003.

10 http://www.acronym.org.uk/dd/dd68/68unapp.htm

11 Working papers by Germany 2002; the New Agenda Coalition 2002 and 2003; Austria, Mexico and Sweden 2—3; Belgium, the Netherlands and Norway 2003 and Austria, Sweden and Ukraine are available online at www.reachingcriticalwill.org npt/nptindex1.html

12 Austria, Sweden and Ukraine "Working Paper: Reductions of Non-Strategic Nuclear Weapons" NPT/CONF.2005/PCIII submitted to the Preparatory Committee for the 2005 Review Conference of the Parties to the Treaty on the Non-Proliferation of Nuclear Weapons Third Session New York: 29 April 2004
http://www.reachingcriticalwill.org/legal/npt/prepcom04/WPX.pdf

13 TNWs do receive periodic mention in international non-proliferation discourse. For example, the 2000 Non-proliferation Treaty RevCon calls for "the further reduction of non-strategic nuclear weapons, based on unilateral initiatives and as an integral part of the arms-control process". For more information on this, see Tariq Rauf, "Towards NPT 2005: An Action Plan for the '13 steps' towards Nuclear Disarmament Agreed at NPT 2000", Monterey Institute for International Studies, 2001. Available online at http://www.cns.miis.edu/pubs/reports/pdfs/npt2005.pdf. However, concrete steps or actual implementation of measures to reduce or control TNWs have not occurred, other than the 1991/92 presidential initiatives.

14 William Potter and Nikolai Sokov, "Tactical Nuclear Weapons: The Nature of the Problem", CNS Reports, Center for Nonproliferation Studies, Monterey Institute of International Studies, 4 January 2001, 6, 11. http://cns.miis.edu/pubs/reports/tnw_nat.htm.

15 Press Statement issued by the Ministry of Foreign Affairs of the Russian Federation, 7 October 2004.

16 Ambassador Leif A. Ulland, Special Adviser on Disarmament, Norwegian Ministry of Foreign Affairs, Statement in General assembly, Fifty-sixth Session, First Committee: General Debate, NEW YORK, 10 October 2001, http://odin.dep.no/odinarkiv/norsk/dep/ud/p10002480/taler/032001-090144/dok-bn.html

17 NATO Press Communiqué M-Nac-2(2000)121, "Report on Options for Confidence and Security Building Measures (CSBMs),Verification, Non-Proliferation, Arms Control and Disarmament", December 14, 2000.

18 Walter Pincus, "Rumsfeld Seeks to Revive Burrowing Nuclear Bomb: Bush Budget May Fund Program That Congress Cut", *Washington Post*, 1 February 2005. p, A2.

19 For more details on measures to reduce readiness levels, remote sensors and other important recommendations, see William C. Potter and Nikolai Sokov, "Practical Measures to Reduce the Risks Presented by Non-Strategic Nuclear Weapons", paper no. 8, The Weapons of Mass Destruction Commission, 2004.

20 Russia indicated that it was willing to negotiate such an agreement as part of the negotiations for the current SORT or "Moscow treaty", but Washington turned this down. Viktor Litovkin "Weapons of Silence", *Vremya,* 11 June 11, p. 8.

Prospects for a Middle East Nuclear Weapons Free Zone

Marvin Miller
retired from the position of Senior Research Scientist in the Department of Nuclear Engineering at Massachusetts Institute of Technology in 1996. He is now a research affiliate at both the MIT Center for International Studies and the Nuclear Engineering Department.

Dr. Lawrence Scheinman
is a Distinguished Professor of the Monterey Institute of International Studies Center for Nonproliferation Studies (Washington D.C. office). Dr. Scheinman was Assistant Director of the U.S. Arms Control and Disarmament Agency for Nonproliferation and Regional Arms Control in the Clinton Administration.

Nuclear weapon free zones (NWFZ) are arms control agreements designed to ensure the total absence of nuclear weapons from the territories of states covered by the agreement. In this respect they go further than the Nuclear Non-Proliferation Treaty (NPT), which seeks to prohibit the spread of nuclear weapons beyond the five nuclear weapon states acknowledged in the treaty, but does not foreclose nuclear weapon states deploying, under their control, nuclear weapons on the territories of non-nuclear weapon states.

Successful negotiation of nuclear weapon free zones has been predicated on the absence of fundamental political or security conflicts among the parties to such arrangements, reflecting the fact that arms control is not a way of resolving political-security conflicts but rather a means to operationalise political decisions to cooperate in the interest of security and stability. Nuclear weapon free zones have been established in both un-inhabited (Antarctic, Outer Space, Seabed) and inhabited (Latin America, South Pacific, Southeast Asia, and Africa although the latter is still not in force) areas. A treaty establishing a Central Asian Nuclear Weapon Free Zone was concluded in 2002, but is not presently in force.

The creation of a nuclear weapon free zone in the Middle East (MENWFZ), and more broadly a zone free of all weapons of mass destruction including delivery systems, has been on the agenda for decades. Resolutions urging the creation of a nuclear weapon free zone date to 1974 when Iran, supported by Egypt, introduced a

A more detailed discussion of some of the issues raised in this paper can be found in Marvin Miller and Lawrence Scheinman "Israel, India and Pakistan: Engaging the Non-NPT States in the Nonproliferation Regime" December, 2003.

resolution in the United Nations General Assembly. Israel abstained in the annual votes that took place from that time forward until 1980 when it joined the consensus on the resolution.

A zone free of weapons of mass destruction in the Middle East was also included in the 1991 UN Resolution 687 ending the Gulf War, and in a resolution on the Middle East at the 1995 NPT Review and Extension Conference. That resolution, co-sponsored by the United States, Russia and the United Kingdom, called upon the states in the region "to take practical steps in appropriate forums aimed at making progress towards, inter alia, the establishment of an effectively verifiable Middle East zone free of weapons of mass destruction, nuclear, chemical and biological, and their delivery systems, and to refrain from taking any measures that preclude the achievement of that objective".[1]

While both the Arab states and Israel support the concept of a nuclear weapons free zone, they have very different ideas about how and when it could be brought into force. In brief, the position of the Arab states is that Israel must first sign the NPT, e.g., "adherence to the NPT by all parties of the region will be conducive to the speedy establishment of a NWFZ ".[2]

Israel, on the other hand, has an aversion to international treaties that might limit its freedom of action, and in particular it has strongly resisted any attempts to force it to adhere to the NPT. It regards the NWFZ as the appropriate vehicle to achieve a nuclear weapon free Middle East in that the parties would be free to negotiate suitable arrangements regarding, e.g., safeguards that are more flexible than NPT modalities. However, in Israel's view, serious consideration of a MENWFZ is premature because it requires political accommodation between it and its Arab neighbours as a necessary precondition.

A detailed statement of Israel's position is given in a 1999 letter to the Director General of the IAEA:

> "The policy of Israel has always maintained that the nuclear issue, as well as all regional security problems, conventional and non-conventional, should be dealt with solely within the context of the regional peace process. Moreover, negotiations on these, as all other issues concerned with the security of the region, could only realistically be expected to take place freely and directly between the regional parties and within the framework of the peace process, a point underscored by the Madrid Peace Conference.
>
> The IAEA by its Statute and mission has no role to play in settling political conflicts. Involvement of international organizations such as

> the IAEA in regional disputes would even be counterproductive to the prospects for attaining a regional settlement as well as for the Agency itself. On a more general level, Israel pins its expectations on peace and regional security arrangements that will combine bilateral as well as multinational elements. Inspired by experience in other regions, not in the least that of Latin America, as well as Europe, we hope that proliferation problems will ultimately find their remedy through a combination of political changes, economic developments, bilateral settlements of disputes and regional arrangements such as those that have become commonplace in other regions.
>
> In the Middle East, as earlier in other regions, progress in the areas of arms control and disarmament can come about only through political accommodation and reconciliation. This process, inherently an incremental one, can only realistically begin with modest, even voluntary arrangements. Gradually, over time, as trust is built, it can proceed to include more ambitious cooperative security undertakings dealing with conventional and ultimately non-conventional areas."

The positions of the Arab states and Israel have not changed in the interim despite the fact that Iran's recent nuclear activities have led to widespread comment on whether pressure on Iran to forgo acquisition of sensitive nuclear technologies in the absence of similar pressure on Israel to curtail its nuclear program in some manner constitutes "a double standard". Indeed, Israel's official position on a MENWFZ was reiterated in the context of the visit of IAEA DG ElBaradei to Israel in July 2004.

Thus, while some Israeli security analysts have suggested that Israel show some flexibility in its policy on WMD, e.g., by supporting a Fissile Material Cut-Off Treaty (FMCT) and/or following Libya's lead in signing and ratifying the Chemical Weapons Convention (CWC) and the Biological Weapons Convention (BWC), there is little enthusiasm for such initiatives in the Israeli political establishment. This is especially true with regard to an FMCT, which is viewed as both a "slippery slope" to premature nuclear disarmament, both politically and technically, and as a "license" for states such as Iran to produce enriched uranium and/or plutonium that could be diverted for weapons use either covertly or overtly following breakout.[3]

Historically, the US has been disinclined to pressure Israel to modify its policy of nuclear ambiguity. Indeed, during the current Bush administration there has been no pressure at all, because the Bush administration fundamentally agrees with Israel's stance that unless and until there is a "sea change" in political relationships in

the Middle East, Israel needs to maintain its nuclear capability under ambiguity while seeking to deny such capability to its enemies. Moreover, Bush administration policymakers also share Israel's distaste for international arms control initiatives that they perceive as limiting their freedom of action without commensurate benefits.[4] Given this, their view is that any "political capital" that can be used to apply pressure on Israel should be reserved for advancing the Israeli-Palestinian peace process.

Thus, while Egypt, in its role as the leading voice in the Arab world on the nuclear issue and as a member of the New Agenda Coalition, will continue to promote the view that nonproliferation and disarmament must go hand in hand, both globally and regionally, UN resolutions that call for Israel to take concrete steps towards implementing a MENWFZ will lead nowhere, as usual. This would be unfortunate since there is now guarded optimism that the Israeli-Palestinian peace process is moving forward, abetted by cooperation between Israel and Egypt, which has now extended to a trade agreement involving Egypt, Israel and the US. It is also clear that Egypt opposes Iranian acquisition of nuclear weapons, but has to be very circumspect in stating its position.

Conclusion

Taken together, the developments suggest the possibility of a new understanding to replace the ritualistic posturing between Israel and the Arab states on a MENWFZ. Such an understanding could be based on the following elements:

1. Acknowledgement by the Arab states that moving forward on arms control, particularly related to nuclear weapons, is tied to progress in the political sphere, but also acknowledgement by both the Arab states and Israel that incremental arms control initiatives can and should follow incremental progress in the political sphere, most importantly with regard to the peace process, but also involving recognition of Israel by the Arab states, plus Iran and Pakistan.

   In order to move forward along these lines, a dialogue between the parties needs to be initiated to delineate an agenda of incremental political initiatives and corresponding incremental arms control agreements including confidence- and security building measures (CSBMs). Such a dialogue must also consider the vari-

ous technical and institutional issues involving, e.g., verification modalities that must be resolved in order to implement such agreements.[5]

Examples of incremental arms control agreements in the nuclear arena are implementation of an Additional Protocol, INFCIRC/540, and enhanced export controls on nuclear and dual use equipment by all states in the region, and support for an FMCT without reference to existing stocks. In the chemical and biological arena, examples would be signing and ratifying the CWC and BWC by all current non-parties.

2. Recognition that (1) requires that all the parties that have a stake in the peace process, including Israel and the US, make a maximum effort to advance the process.

3. Recognition that improved relations between Israel and its neighbours and also between India and Pakistan is a necessary but not a sufficient condition for a nuclear free Middle East and South Asia. It would be naïve to believe that Israel, India, and Pakistan will give up their nuclear weapons while the P-5 retain theirs in the name of national security. This lends support to the agenda of the New Agenda Coalition (NAC) that links non-proliferation with concrete steps towards global denuclearisation including entry into force of the CTBT and negotiation of a verifiable FMCT. Of course, these treaties as well as the NAC's opposition to any plans to develop new nuclear weapons are not favoured by the current Bush administration, but they have strong support elsewhere, especially in the EU which can be expected to play an increasing role in the non-proliferation arena, especially if it can reach an agreement with Iran on the nuclear issue. In this connection, it should be noted that the current government of Iran has reiterated its support for a MENWFZ.

In sum, while a MENWFZ remains a long-term goal, the risk of further proliferation in the Middle East is an immediate and serious problem whose solution depends, inter alia, on progress in regional arms control linked to progress in the political arena.

Endnotes

1 NPT/CONF.1995/32/RES/1, www.fas.org/nuke/control/npt/text/resoluti.htm

2 UN GA Resolution 36/81, 9 Dec. 1981, www.un.org/documents/ga/res/36/a36r081.htm

3 In an explanation of Israel's abstention on a resolution urging conclusion of an FMCT, it asserted that the main problem is that FMCT gives further legitimacy for states to acquire fuel cycle facilities without adding any new commitments for those already party to the NPT. See Israel: Explanation of abstention on resolution A/C.1/59/L34

4 Some arms control treaties do have Israeli support including the CTBT, CWC and its Protocols, and Convention on the Physical Protection of Nuclear Material.

5 EURATOM and the Brazilian-Argentine Agency for Accounting and Control of Nuclear Materials (ABACC) are verification modalities that go beyond standard NPT safeguards.

Nuclear Non-Proliferation and United Nations Security Council Resolution 1540

Alistair Millar
is Vice President and Director of the Washington DC office of the Fourth Freedom Forum. He has written numerous articles, reports and book chapters on nuclear weapons issues.

Dr. Morten Bremer Mærli
is a senior researcher at the Norwegian Institute of International Affairs, working on nuclear non-proliferation and prevention of nuclear terrorism.

In order to address the threats of terrorism, the proliferation of weapons of mass destruction (WMD) and the deadly nexus between the two, the international community has undertaken a series of innovative measures. The most notable of these is United Nations Security Council (UNSC) Resolution 1540.[1]

Motivated by a heightened sensitivity to nuclear security after the terrorist attacks of 11 September 2001 and the revelations in February 2004 of the nuclear black market run by Pakistani scientist A.Q. Khan, the UNSC enacted in Resolution 1540 what is perhaps the most far-reaching multilateral policy re-orientation against nuclear proliferation since the Treaty on the Non-Proliferation of Nuclear Weapons (NPT) entered into force 35 years ago.

This brief reviews the origins and main points of Resolution 1540, its relationship to other multilateral initiatives that aim to prevent nuclear, chemical and biological weapons proliferation, and its implications for future non-proliferation activities. It concludes with a series of concrete recommendations on how UNSC Resolution 1540 might strengthen international nuclear non-proliferation efforts within the context of the NPT review process.

UNSCR 1540

On 28 April 2004, the UNSC unanimously adopted Resolution 1540 from a draft text submitted by the US delegation to the UN. The Resolution requires all UN member states to undertake a series of measures to prevent the proliferation of biological, chemical and nuclear weapons; their delivery systems and related material; and

particularly to prevent their transfer to terrorists and other non-state actors. It specifically prohibits countries from providing any kind of support to non-state actors for the development of weapons of mass destruction (WMD), and it mandates that states adopt laws to prevent the diversion and transfers of WMDs and related material.

Resolution 1540 strengthens the international non-proliferation regime by calling upon all states "to promote the universal adoption and full implementation, and, where necessary, strengthening of multilateral treaties to which they are parties, whose aim is to prevent the proliferation of nuclear, biological or chemical weapons." The Resolution also mandates states to adhere to the Convention for Physical Protection of Nuclear Material.

Further, Resolution 1540 calls for the creation of a Committee to oversee its implementation, to be chaired by Ambassador Motoc of Romania. A group of experts has been hired to ensure swift and qualified monitoring based on documentation provided by states. In the context of UNSC Resolution 1540, all states were required, by 28 October 2004, to report on their efforts to review domestic laws and regulations, and to demonstrate that action was being taken to comply with the Resolution. By that deadline, only 54 of 191 countries had submitted their required reports. As of 31 January 2005, the number was 86.

The Resolution is binding under Chapter VII of the UN Charter and extends UN counter-terrorism mandates to address the problem of proliferation. UNSC Resolution 1540 is based largely on UNSC Resolution 1373, unanimously passed two weeks after the terrorist attacks of 11 September 2001. Resolution 1373 imposed sweeping legal obligations on every UN member state, creating an innovative campaign of non-military, co-operative law enforcement measures to combat global terrorist threats. That resolution requires every state to freeze financial assets of terrorists and their supporters, deny travel or safe havens for terrorists, prevent terrorist recruitment and weapons supply, and co-operate with other countries to share information and prosecute criminals. Jointly, these two resolutions form the basis of the UN's efforts to combat terrorism and WMD proliferation.

Implications for Non-Proliferation Activities

First, UNSC Resolution 1540 recognises the state as the sole legitimate holder of WMD-related material. Non-state actors have no such rights and should actively be denied WMD access. At the

same time, the Resolution acknowledges that the ability of states to maintain absolute control over such material is often inadequate.[2]

Second, the Resolution proclaims strong support for existing non-proliferation norms. It reinforces specific provisions of the NPT, the Chemical Weapons Convention (CWC) and the Biological and Toxin Weapons Convention (BWC) that are, in most cases, intended to be monitored by established treaty mechanisms.[3] However, the Resolution does not embed itself in the NPT, CWC and the BWC, as support otherwise would have been withheld by states that have not joined these treaties.[4]

Third, the Resolution sets aside the tricky question of how to deal with non-compliance. Assessments are to be performed by the group of experts reporting back via the Committee to the UNSC. As in the case of Resolution 1373, the initial rounds of reporting by states and follow-up questions by the experts will focus on determining and facilitating assistance to states. Evidence of non-compliance after attempts to ensure that states have been offered such assistance, will then be officially reported to the UNSC by the Resolution Committee. The Security Council (with the same 15 UN member states that sit on the Resolution Committee) will then determine the course of action – such as tribunals, embargoes or military force – after all means of persuading delinquent member states have been exhausted.

There will be no permanent secretariat to oversee the implementation of the Resolution and the vigour of the current committee-based control mechanism remains to be seen. The Committee has a mandate until the end of 2006, when it will need to be re-authorised by the UNSC. It was the USA that secured a time limit for the Committee, because of its opposition to creating any additional permanent UN bureaucracy.[5] Resolution 1540 was, however, adopted by consensus and it does identify important measures to strengthen international non-proliferation efforts. Moreover, it reflects a genuine move by the Bush Administration to re-engage in institutional multilateral co-operation.

These actions are particularly significant at a time when the international security climate is, otherwise, characterised by unilateralism and ad hoc coalition building. UNSC Resolution 1540 reverts to the common diplomatic language of non-proliferation, multilateralism and co-operation, without any reference to counter-proliferation or military pre-emption and/or prevention.[6] The resolution is being used, however, by the Bush Administration to provide legal justification for counter-proliferation measures under

the Proliferation Security Initiative (PSI).[7]

The impact of Resolution 1540 may be strong, if it is cultivated and managed correctly. A UNSC resolution is one of the most direct means for expanding international law. Resolution 1540 may be applied to ground various efforts to stem proliferation in international law. Among other steps, its operative paragraph 10 calls upon all states to take co-operative action to stop, impede, intercept and otherwise prevent the illicit trafficking in WMD, their means of delivery and related material.

As the Director General of the International Atomic Energy Agency (IAEA), Mohammed ElBaradei, has noted, "The operative paragraphs of the Resolution cover legal measures, accountancy and control measures, physical protection measures, border controls, measures to detect, deter, prevent and combat illicit trafficking, and export and import measures. They closely mirror the structure and activities of the Agency's existing nuclear security Plan of Activities".[8] Accordingly, the Resolution could bolster relevant IAEA activities; and, if requested, the Agency will be able to offer technical advice on how to implement the Resolution.

The Resolution could also serve to tighten international controls over the export of sensitive nuclear material and technology. Again according to ElBaradei, "the nuclear export control system should be binding rather than voluntary, and should be made more widely applicable, to include all countries with the capability of manufacturing sensitive nuclear related items… As prescribed in April by Security Council resolution 1540, it [the international export control system] should ensure effective national control over sensitive items, and criminalize the actions of individuals and companies involved in efforts to acquire nuclear weapons."[9]

Moreover, Resolution 1540 provides a unique opportunity to engage treaty holdouts in concerted and formalised non-proliferation activities. Now, for the first time, such states have similar obligations as the rest of the world. Pakistan, for example, like India and Israel, is not a member of the NPT. Yet its government used Resolution 1540 to justify new more stringent export controls.[10] For signatories to the NPT that have been lagging behind in establishing a state system of accounting and control, the Resolution may also speed up the establishment of relevant national regulations, as well as implementation of the Additional Protocol.

However, the Resolution does very little in the direction of healing past wounds to the international non-proliferation regime.[11] There is no specific mention of the role of safeguards and verifica-

tion as essential tools for nuclear security and long-term nuclear stability, nor of the discouraging lack of global implementation of the Additional Protocol. Furthermore, with the NPT facing unprecedented stress, the Resolution makes no reference to the 13 practical steps adopted at the 2000 Review Conference for systematic and progressive efforts to implement Article VI of the NPT and paragraphs 3 and 4(c) of the 1995 Decision on "Principles and Objectives for Nuclear Non-Proliferation and Disarmament." Nor does it address the inherent linkages between non-proliferation and genuine nuclear disarmament.[12]

Although the Resolution was primarily aimed at so-called rogue states, the language of operative paragraph 8 calls upon *all* states to "promote the universal adoption and full implementation, and, where necessary, strengthening of multilateral [non-proliferation] treaties". As such, Resolution 1540 may offer opportunities to persuade nuclear-weapon states to live up to established non-proliferation norms and to fulfil their own disarmament obligations. In fact, the US advocacy for a more stringent interpretation of Resolution 1540's reporting requirement may serve to underline its own marginal position on many multilateral non-proliferation agreements. Specifically, it may help draw attention to the failure of the USA to ratify the Comprehensive Test Ban Treaty and its abandonment of a verifiable Fissile Material Cut-Off Treaty (FMCT).[13] Despite the potential of the Resolution, UN member states and the United States – its chief architect – have failed to accord it the priority, infrastructure and resources necessary to fulfil these goals.

Conclusion and Policy Recommendations

UNSC Resolution 1540 provides an unprecedented opportunity to pursue the mutually reinforcing goals of disarmament and non-proliferation within the most inclusive and legitimate multilateral body in the world. The Resolution Committee and its experts can facilitate the role that the 191 UN member states must play to prevent and prosecute non-state proliferators, and deny them non-conventional means. It can fill a gap that has emerged in existing arms control and non-proliferation agreements, and help maintain the relevance of the non-proliferation regime.

In implementing the Resolution, the Resolution Committee and all UN member states should work to increase the capacities of states to act against proliferation threats, with a particular focus on those nuclear-weapon states that are not parties to the NPT. In do-

ing so, they should enhance the role and effectiveness of the IAEA and promote efficient and up-to-date verification and safeguards mechanisms. Member states must ensure that the IAEA can perform a central role in assessing the assistance needs of recipient states. Moreover, it is important that the Resolution 1540 process continually emphasises co-operation and multilateralism as vital tools for mutual nuclear security.

The following specific steps should be taken to strengthen the impact of Resolution 1540, as well as the NPT review process:

- Work to establish clear criteria for compliance with Resolution 1540. The experts of the Resolution 1540 Non-Proliferation Committee, states, and relevant international organisations would benefit from the establishment of a transparent, fair and clearly defined evaluation process; this would also better enable assessments of states' needs and of potential compliance problems.
- Establish a higher minimum standard for control lists. Currently, Resolution 1540 allows two different standards: one for state parties to multilateral agreements and another for all other states, who must comply with national control lists, which may be less comprehensive.[14]
- Emphasise both nuclear non-proliferation and disarmament, and their inherent linkages.
- Promote strong, effective state systems of protection, control and accounting, as the primary line of defence.
- Action should be taken by nuclear-weapon states to implement more effective non-proliferation practices. These should include control and irreversible destruction of nuclear material declared in excess of national security needs, and establishment of principles for stockpile management. The USA and the Russian Federation should continue to implement the Trilateral Initiative with the IAEA.

Endnotes

1 The full text of UNSC Resolution 1540 is included in an appendix to this policy brief.

2 William Walker, "Weapons of Mass Destruction and International Order", *Adelphi Paper* 370, International Institute for Strategic Studies, November 2004, p. 74.

3 Gabriel Oostuizen and Elizabeth Wilmshurst, "Terrorism and Weapons of Mass Destruction: United Nations Security Council Resolution 1540", Chatham House *Briefing Paper* 04/01, September 2004.

4 Walker, op. cit., p. 75.

5 Wade Boese, "U.S. Disappointed With Worldwide Response to WMD Resolution", *Arms Control Today,* December 2004.

6 Walker, op. cit., p. 75.

7 "Proliferation Security Initiative: Frequently Asked Questions", US Department of State, Bureau of Non-proliferation, 27 December 2004. http://www.state.gov/t/np/rls/fs/32725.htm

8 Mohammed ElBaradei, "Nuclear Security – Measures to Protect against Nuclear Terrorism", Report by the Director General of the IAEA to the Board of Governors General Conference, 11August 2004.

9 Mohammed ElBaradei, "Nuclear Non-Proliferation: Global Security in a Rapidly Changing World", Statement at the Carnegie International Non-Proliferation Conference, 21 June2004.

10 "Counter-Proliferation in Asia: No Place to Hide, Maybe", *The Economist,* 28 October 2004.

11 Walker, op.cit., p. 75.

12 According to the Canberra Commission on Nuclear Proliferation: "Nuclear weapons are held by a handful of states which insist that these weapons provide unique security benefits, and yet reserve uniquely to themselves the right to own them. This situation is highly discriminatory and thus unstable; it cannot be sustained. The possession of nuclear weapons by any state is a constant stimulus to other states to acquire them".

13 The UK in its National Report on Implementation of UNSCR 1540 notes, under Operative Paragraph 8, that this "promotes early entry into force of the Comprehensive Test Ban Treaty (CTBT)."

14 This disparity between tougher multilateral lists and weaker national lists encourages the lowest common denominator, and may lead terrorists to seek to acquire items in countries that do not prohibit certain materials contained on more comprehensive multinational lists.

Ad Hoc Security Initiatives versus Institutionalised Nuclear Arms Control

Dr. Morten Bremer Mærli is a senior researcher at the Norwegian Institute of International Affairs, working on nuclear non-proliferation and prevention of nuclear terrorism.

In the post-Cold War environment, some states are providing practical security assistance to other states in order to reduce common threats. Since the early 1990s, a range of new nuclear security initiatives has been initiated.

Bilateral programmes, mostly US–Russian, have ranged from those aimed at securing or destroying weapons and weapons-usable materials in the former Soviet Union, at combating trafficking in illicit nuclear materials, at engaging out-of-work weapons scientists, to those focused on physical downsizing of Russia's nuclear weapons complex. The terrorist attacks of 11 September 2001 also spurred a wave of international security initiatives – most notably the G8 Global Partnership against the Spread of Weapons and Materials of Mass Destruction, the Proliferation Security Initiative, and the Global Threat Reduction Initiative.[1] In parallel, the European Union adopted a Security Strategy Against the Proliferation of Weapons of Mass Destruction, and the UN Security Council adopted Resolution 1540.[2]

This brief compares the new ad hoc security initiatives with those of institutionalised nuclear arms control, and examines two prominent examples: The Cooperative Threat Reduction (CTR) programme and the Nuclear Non-Proliferation Treaty (NPT). What are their inherent opportunities and particular constraints and limitations? Are there possible beneficial interactions between the two processes? Or is it necessary to choose one or the other to ensure that common goals of nuclear security are being met, and not undermined?

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Operational Dimensions at Play

The goal of the Cooperative Threat Reduction (CTR) programme is to prevent the proliferation of weapons of mass destruction (WMD) and related materials, technologies and expertise from the former Soviet Union.[3] This includes providing for safe and secure destruction of Soviet-era WMDs, associated delivery systems and related infrastructure. Originally championed through the US Congress in 1991 by Senators Nunn and Lugar and linked to Russian START I commitments, the CTR programme of the US Department of Defense soon stimulated related bilateral nuclear security initiatives. The CTR acronym is now used to cover a range of practical measures aimed at reducing dangerous remnants of the Cold War.[4] Efforts to broaden the programmes and the list of recipient states have been promoted under the rubric of Extended Cooperative Threat Reduction.[5]

CTR shares many of the principal goals of institutionalised nuclear arms control. Both approaches aim to prevent the spread of nuclear materials and technologies for weapons purposes. However, the succinct objectives of the two non-proliferation avenues differ, as do the means and mechanisms at play. An overview of the operational dimensions of Cooperative Threat Reduction activities and of the Nuclear Non-Proliferation Treaty is given in Table 1.

CTR projects are normally formulated bilaterally, at times under a coalition umbrella such as the Global Partnership of the G8.[6] Whereas CTR activities rest upon carefully drafted, tailor-made agreements between all actors involved, the operative parts of the NPT are ensured through a set of fixed safeguards agreements, based on internationally accepted model protocols and requirements.[7] The International Atomic Energy Agency is a well-established organization tasked with ensuring compliance with these agreements through a rigorous control system.

The carefully developed safeguards system represents a highly state-centric mechanism with a proven track record in monitoring and preventing the proliferation of nuclear

Table 1. Operational dimensions of Cooperative Threat Reduction (CTR) activities and the Nuclear Non-Proliferation Treaty (NPT)

Operational Dimension	CTR	NPT
Arrangement	Bilateral agreements	Safeguards agreements
Actors	State and non-state	State and IAEA
Structure	Ad hoc, donor–recipient	Institutionalised
Control and Assessments	Provisional	Institutionalised
Actors	Variable	Institutionalised
Means	Interim	Institutionalised
Time Frame	Temporary	Permanent
Scope	Proliferation-attractive means and materials	Nuclear activities
Focus	Local	Global

materials and associated technologies. It operates on the basis of equity in all non-nuclear weapon states. CTR activities, by contrast, are often ad hoc initiatives, operating on a limited timeframe and with an inherent patronage relationship between donors and recipients. Some of them are sponsored by NGOs. The activities are vulnerable to changing conditions. Many officials still perceive threat reduction assistance as foreign aid rather than an investment in the first line of defence against WMD terrorism.[8]

Cooperative threat reduction is not the preserve of any single institution or organisation; it may be implemented by a mix of state and non-state actors.[9] Effective, coordinated utilisation of the resources made available is a challenge. While guidelines have been formulated for some CTR activities,[10] there is a general lack of overarching organising principles and structures. CTR is, furthermore, characterised by a high level of "learning by doing", involving an asymmetrical flow of information where donors are supposed to receive and recipients to make data available upon request. In contrast, institutionalised safeguards require *all* member-states to provide accurate, timely and relevant information about their nuclear activities. Safeguards, even some of the voluntary ones, also include strict provisions concerning verification and inspection.

The focus and the scope of the two approaches to nuclear security differ as well. While CTR activities offer an opportunity to pinpoint countermeasures at particular nuclear sites, NPT safeguards deal with the complete nuclear cycle of the states involved. Where CTR allows for specific, local initiatives in selected recipient states, the NPT and its safeguards system have a nearly global coverage, embedded in national regulations and practices.

Implications for Non-Proliferation Activities

A central feature of CTR activities is their flexibility. Less stringent schemes allow for highly opportunistic approaches, where these are pertinent. If the relations between two or more states are ripe, and if appropriate technical means to pressing proliferation problems are available, CTR activities may provide quick and effective solutions to proliferation challenges. The NPT, with its fixed safeguards system, offers much less elasticity and fewer options for swift responses. Violations by states may take years to uncover, report and react to. Crisis aside, the somewhat monotonous monitoring of the IAEA may moreover generate lower visibility and hence less political interest and funding. For years, the IAEA has had to cope

with a zero-growth safeguards budget.

The high level of CTR flexibility translates into less stringent obligations on behalf of the actors involved. It may therefore be easier to create the necessary political will in donor and recipient states. It follows, however, that sustainability may become an issue. Long-term funding may be needed in order to meet and maintain project goals, yet actors may pull out of existing CTR agreements or abstain from future ones. While it may be too easy to leave the NPT and terminate IAEA safeguards – North Korea being a critical case in point – abandoning formalised arms control agreements is after all more costly than leaving a CTR undertaking.

The lack of institutionalised structures could, moreover, render control and verification more challenging in the CTR context. The level of intrusiveness of the two main approaches is determined by the type of agreement accepted by the actors involved. With the Additional Protocol (INFCIRC/540) the IAEA safeguards regime has, in effect, been reshaped from a quantitative system focusing on declared materials and activities to a qualitative system establishing a comprehensive picture of a state's nuclear activities, including all nuclear-related imports and exports. Through extended information and data gathering, the Additional Protocol expands the IAEA's ability to check for clandestine nuclear facilities. Similarly, for cooperative threat reduction, in situations where trust and good working relations have evolved, more information may be released and more intrusive verification may be accepted, as part of bilateral arrangements.[11] The level of intrusiveness for the two approaches may hence be high or low, depending on the circumstances.

However, past lessons have shown that in the absence of legal obligations, access and information may not be provided.[12] Indeed, CTR work has been hampered by the lack of transparency, and Washington has largely neglected Moscow's calls for reciprocity regarding access and information. Consequently, whereas donor states need assurances that the money is well spent, and that the support provided meets project objectives, admission to Russian nuclear facilities has been a recurrent problem for CTR activities. Likewise, unresolved liability issues have proven a major obstacle. The liability impasse has delayed construction of essential CTR facilities, and important projects have lost momentum.[13]

In sum, CTR may be more vulnerable to political and financial fluctuations, and to implementation challenges. Concern has been voiced that current problems may jeopardise extension beyond June 2006 of the US–Russian agreement governing major parts of their

CTR agenda.[14] Even if such worries turn out to be unwarranted, experience suggests that CTR implementation can be seriously hampered unless a number of "top–down" issues are properly addressed as projects are carried out.[15] NPT safeguards, on the other hand, entail well-defined requirements and responsibilities at all levels in member states.

CTR and NPT Synergies

Continued co-existence between ad hoc nuclear security initiatives and institutionalised arms control is likely to be fruitful. CTR may provide swift solutions to pressing proliferation problems, and assist states in meeting their arms control obligations. Actually, the CTR programme was launched in 1992 to support a traditional arms control agreement. In particular, CTR activities can do much to secure and eliminate stocks of fissile material emanating from dismantled nuclear weapons.

Many of the 13 practical steps for implementation of article VI of the NPT that were adopted by consensus at the 2000 NPT Review Conference may directly benefit from CTR-related activities. Among them are:

- Step 5: Making the principle of irreversibility apply to nuclear disarmament.
- Step 10: Arrangements by all nuclear-weapon states to place fissile material designated by each of them as no longer required for military purposes under IAEA or other relevant international verification, as soon as practicable.
- Step 10: Arrangements for the disposition of such material for peaceful purposes, to ensure that such material remains permanently outside of military programmes.
- Step 8: Implementation of the Trilateral Initiative between the United States of America, the Russian Federation and the International Atomic Energy Agency.

Conversely, the demands for transparency, disarmament, irreversibility and verification embedded in the NPT process may facilitate CTR work. Also, the NPT process may provide the legal and institutional backdrop that has often been missing in CTR initiatives. There are, in other words, important yet under-utilized synergies between ad hoc initiatives and traditional arms control.

Conclusion

Ad hoc security initiatives (CTR) and treaty-based arms control (NPT) are closely related, and should work in tandem. Pursued in a supplementary rather than a substituting manner, they may be mutually reinforcing.

CTR projects are mostly bilateral undertakings. Recently, they have also been cast in collective frameworks. Hence, CTR may be seen as part of a larger trend towards coalitions of the willing in international security affairs. However, to ensure a much needed degree of predictability and robustness in times of political turbulence, explicit, substantial links to the non-proliferation regime are of the essence.

The NPT should therefore remain the overarching framework for measures to meet nuclear proliferation challenges. CTR activities should be linked, formally and practically, to the modalities and objectives of the NPT process.

Endnotes

1 The Global Threat Reduction Initiative (GTRI) enhances national programmes to identify, secure, remove and/or facilitate the disposition of vulnerable nuclear and other radiological materials and equipment around the world – as quickly and expeditiously as possible – that pose a threat to the international community. A related effort is the US Megaports initiative aimed at detecting, deterring and interdicting illicit trafficking in nuclear and other radioactive materials.

2 UN Security Council resolution 1540, adopted by consensus on 28 April 2004, requires all UN member-states to develop and maintain effective measures to account for and secure WMD-related items in production, use, storage and transports. For the resolution text, see http://www.state.gov/t/np/rls/other/31990.htm

3 The Defense Threat Reduction Agency, http://www.dtra.mil/press_resources/fact_sheets/display.cfm?fs=ctr , provides a description.

4 Contemporary cooperative threat reduction activities may be defined as: "practical measures to enhance security jointly implemented and with the consent on the territory of a state by a coalition of parties that may include states, international organisations, local and regional governments, non-governmental organisations and the private sector". From Ian Anthony, *Reducing Threats at the Source. A European Perspective on Cooperative Threat Reduction*, SIPRI Research Report no. 19, Stockholm International Peace Research Institute, 2004, p. 6.

5 The first use of US Cooperative Threat Reduction Program funds outside Russia and the former Soviet states will be in Albania. In October 2004, the Bush Administration released $20 million for the destruction of approximately 16 tons of chemicals from Albania's chemical weapons stockpile over the next two years. See Kenneth Luongo and William Hoehn, "An ounce of prevention", *The Bulletin of the Atomic Scientists*, vol. 61, no. 2, March/April 2005, pp. 28–35. http://www.thebulletin.org/print.php?art_ofn=ma05luongo

6 Even multilateral ad hoc nuclear security initiatives, like that of the G8, emphasise the importance of concerted and coordinated bilateral cooperation.

7 INFCIRC/153 (Corrected), The Structure and Content of Agreements Between the Agency and States Required in Connection with the Treaty on the Non-Proliferation of Nuclear Weapons, 1972 and INFCIRC/540, Model Protocol Additional to The Agreement(s)Between State(s) and the International Atomic Energy Agency for the Application of Safeguards, 1997.

8 Luongo and Hoehn, op. cit.

9 Anthony, op.cit., p. 7.

10 E.g. the guidelines formulated for the Global Partnership of the G8 countries.

11 For a success story, see Morten Bremer Maerli, "U.S.–Russian Naval Security Upgrades. Lessons learned and the way ahead", *Naval War College Review*, Autumn 2003, Vol. 56, No. 4, www.nwc.navy.mil/press/Review/2003/Autumn/art2-a03.htm

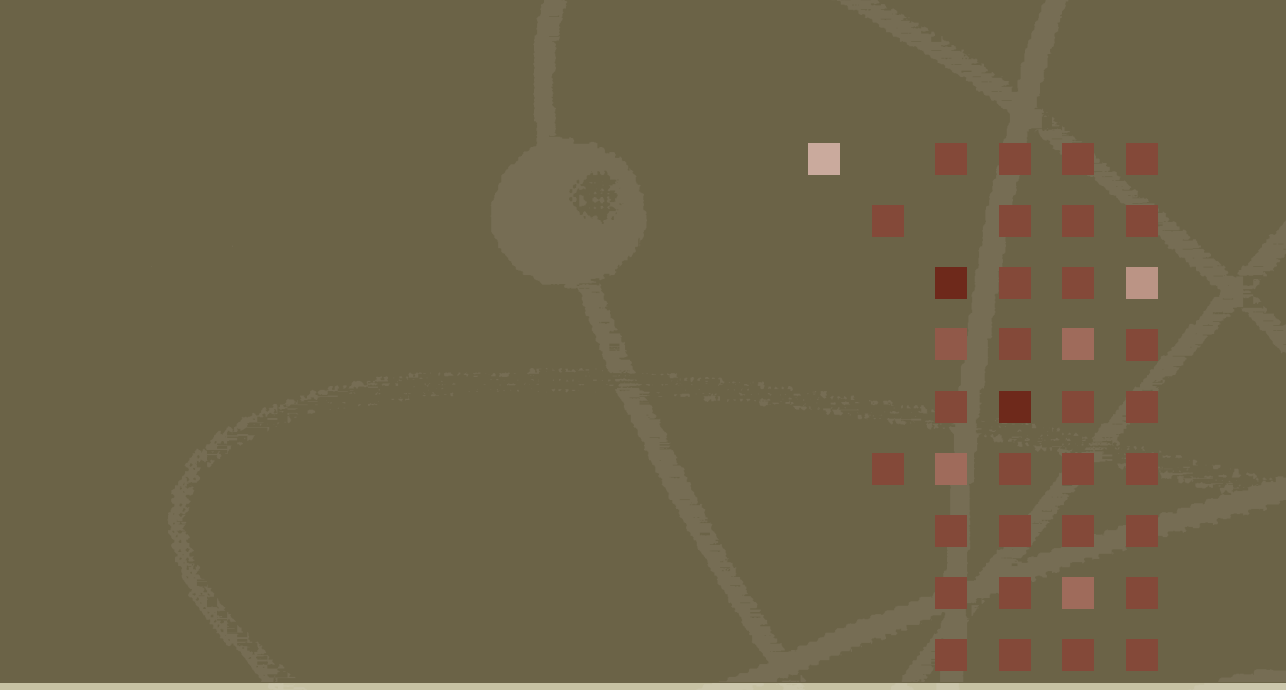
12 Ian Anthony, op.cit., p. 15.

13 Kenneth Luongo and William Hoehn, op.cit.

14 Kenneth Luongo and William Hoehn, op.cit.

15 Ian Anthony, op.cit., p. 80.

16 Examples include international disagreement on the NATO expansion, the Kosovo intervention and the war against Iraq. The decision by the US Senate to hold back CTR funds earmarked for chemical weapons elimination due to Russian–Iranian nuclear cooperation was only temporary.



The nuclear Non-Proliferation Treaty (NPT) is the backbone of an international regime comprising IAEA safeguards, security assurances for non-nuclear-weapon states, guidelines for nuclear supplies, provisions for protection of nuclear materials, export control mechanisms, nuclear weapon-free zones and other arms control measures. The Treaty links non-proliferation goals with nuclear disarmament obligations.

In retrospect, and despite setbacks, the overall impact of the NPT has been significant and gratifying. However, its achievements have been hard won, and they are increasingly contested. Its continued success is by no means guaranteed. Since the 2000 NPT Review Conference a number of new challenges to the non-proliferation regime have emerged.

This publication contains a set of policy briefs on ways to enhance the viability of the non-proliferation regime. Some of them address issues which have been considered throughout the history of nuclear arms control, but which remain unresolved. Others discuss recent initiatives which have not been discussed at previous Review Conferences.