A Nuclear Weapons Convention (NWC) is a treaty or framework of treaties to prohibit nuclear weapons with a plan for their verified elimination. The NWC Monitor includes analyses and opinions exploring the political, legal, and technical aspects of progress towards complete nuclear disarmament under a verifiable international regime.

Contributions to the NWC Monitor are part of the continuing discussion surrounding the model NWC contained in Security and Survival: The Case for a Nuclear Weapons Convention by the International Association of Lawyers Against Nuclear Arms, the International Network of Engineers and Scientists Against Proliferation, and the International Physicians for the Prevention of Nuclear War. The original model NWC was drafted under the leadership of the Lawyers’ Committee on Nuclear Policy and is United Nations document A/C.1/55/7 (1997).
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### 1. Nuclear Disarmament Today

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Introduction

The concept of a nuclear weapons convention (NWC) is gaining ground, even as the political environment necessary for complete nuclear disarmament appears increasingly elusive. The release of the Model NWC in 1997 was intended to encourage debate about the political, legal, and technical requirements of an international regime for the verified prohibition and elimination of nuclear weapons. Since then, this debate has grown richer, broader in scope, and more nuanced in content, as the articles and quotes in this issue of the *NWC Monitor* indicate.

Recent political developments, however, seem to challenge the development of a good faith global effort to abolish nuclear weapons. Within some of the nuclear decision making circles, talk about strategic nuclear weapon reductions is linked to missile defenses, undermining the policy and paradigm shifts needed to move away from security based on the threat of mass destruction. Other policy makers and analysts would prefer to continue relying on deterrence by itself as a cornerstone of “strategic stability.”

Both these positions grow out of the Realist perspective, a school of thought that regards the quest to achieve and maintain power as the only way to understand international relations. Although Realism works to explain some current policies and practices, it does not address the untenable reality that will develop if these policies and practices continue. The damage caused by a strictly Realist approach to security is a theme that runs throughout this issue of the *NWC Monitor*. Other themes include the choices and opportunities that could lead the international community away from the dangers inherent in maintaining the status quo.

Section 1 of this issue, Nuclear Disarmament Today, looks at the current security environment with a view to the goal of nuclear disarmament. This section includes an update of resolutions, statements, and analyses relating to a nuclear weapons convention. Government references to the NWC are increasing, as are analyses that use the concept of an NWC and the Model NWC as tools to explore the goal of nuclear abolition. The contributions to this section also point more generally to the role of law in social and political change.

In Section 2, current Nuclear Choices facing governments, institutions, and individuals are spelled out. Observations about critical junctures and windows of opportunity have become cliche. Either our governments and policy makers want nuclear disarmament or they do not. Either they continue to pursue security through threat, technology, and secrecy, or they respond to the various calls for human security and proposals such as those presented here.

These choices will have a direct bearing on the role of science in society, as illustrated in Section 3, Science and Verification. The cause and effect, however, work in two directions. The work scientists pursue today will also shape future security options: either more high-technology militarization or a nuclear weapons free world. This section suggests that much valuable work can already begin, and has begun, to promote verified elimination of nuclear weapons.

Section 4 looks at Health, Environment, and Energy aspects of living in the Nuclear Age. A theme that emerges from this section is the lack of openness regarding the effects of nuclear choices made in the past on health and environment today. Efforts to deal honestly with these effects, along the lines suggested in this section, will help remedy past grievances as well as address the challenges of nuclear disarmament in a way that does not compromise health and the environment.
Section 1.
Nuclear Disarmament Today

Introduction

This section examines the current political environment with a view to the goal of complete nuclear disarmament and the use of a nuclear weapons convention as a tool in that process. The contributions and quotes here point to the changing and changeable aspects of the international security environment, in which the decision to pursue nuclear disarmament is made and implemented. Some have argued, here and elsewhere, that nuclear disarmament cannot be achieved in one step or in one treaty. This seems indisputable, and the examples that follow point to the variety of perspectives and actions that shape nuclear disarmament.

Statements, resolutions, and analyses by governments and observers indicate that attention to the idea of a nuclear weapons convention is increasing. Although some of the opinions presented here do not directly advocate such a convention or framework approach, they demonstrate the role it can play in focusing the debate about the prohibition and elimination of nuclear weapons. They also illustrate that the achievement of a convention, or framework of conventions, builds on a range of efforts with a singular purpose, embodied in the concept of a nuclear weapons convention.

Following the overview of various resolutions and statements, as well as responses to the Model NWC, Alyn Ware analyzes the annual UN resolution that follows up on the 1996 advisory opinion of the International Court of Justice on the Legality of the Threat or Use of Nuclear Weapons. This resolution calls for negotiations leading to a nuclear weapons convention and indirectly raises questions about the element of time in the negotiation and pre-negotiation process.

Peter Nicholls discusses a workshop on the idea of a nuclear weapons convention, where issues critical to the future of nuclear disarmament were debated, using the Model NWC as a starting point. Jozef Goldblat looks at the elements of complete nuclear disarmament in the context of today’s political reality. Penelope Simons examines the role of law in shaping political reality, despite Realism, and Kathleen Sullivan provides an illustration of this role in her discussion of the recent Trident case. An update of this case and short analysis follow.

One conclusion that emerges from this section is that, among the nuclear weapon states, the UK is leading the world in the level of dialogue between the government and civil society. The debate over a nuclear weapons convention, in conjunction with the growing success of the Trident Ploughshares non-violent campaign, suggest a two-track strategy that might be effective for influencing other governments and alliances.
### Nuclear Weapons Convention: Resolutions, Statements, and Analyses

#### Australia: Department of Foreign Affairs and Trade, 25 August 2000

Some countries and non-government organisations have called for the negotiation of a global nuclear disarmament convention or treaty.

Australia believes that, for the time being, the main steps towards nuclear disarmament are best pursued bilaterally, between the United States and Russia, under the START process. The premature multilateralisation of the disarmament process would serve only to complicate and slow down the existing process of bilateral nuclear disarmament between the US and Russia. Once the two largest Nuclear Weapon States have reduced their nuclear stockpiles to levels roughly comparable with the other NWS, the process will become a plurilateral one – among all the recognised NWS. A nuclear weapons convention might become appropriate when all NWS have reduced their nuclear weapon holdings to quite low levels.

This approach was recognised by the Canberra Commission on the Elimination of Nuclear Weapons (August 1996), which said that “following the achievement by the United States and Russia of appropriate force levels, the next step might be to reduce the levels of all nuclear weapons states to 100 warheads each” (p 64) and that as “nuclear disarmament nears the elimination stage, consideration should be given to whether the legal obligations to sustain a nuclear weapon free world would be best given effect by the incremental approach of a number of separate instruments or through a comprehensive approach which would combine all relevant instruments into a single legal instrument – a nuclear weapons convention” (p 66).


#### Australian Labor Party – Foreign Affairs Platform, Adopted July 2000

With regard to nuclear disarmament and non-proliferation, Labor will energetically support and pursue appropriate initiatives, such as those recommended by the Canberra Commission on the Elimination of Nuclear Weapons, the Tokyo Forum for Nuclear Non-Proliferation and Disarmament, and the New Agenda Coalition, to achieve further deep reductions in nuclear armament and strengthen non-proliferation regimes as steps toward the ultimate objective of a nuclear weapon free world....

...In the longer term, achievement and maintenance of a nuclear weapon free world will require an enduring legal framework, linked to the Charter of the United Nations. Labor supports exploration of potential legal frameworks for the abolition of nuclear weapons, including negotiation of a Nuclear Weapons Convention that would ban nuclear weapons and provide a global framework for the elimination of existing arsenals.

The ALP has also indicated that consideration of a nuclear weapons convention “should not be put aside as a project for the distant future, but must be undertaken alongside other step-by-step disarmament measures.”


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Canada: Parliamentary Motion on the Nuclear Weapons Convention

There is a growing global movement working for the elimination of all nuclear weapons. One of the most encouraging developments in this movement has been the preparation of a Model Convention on Nuclear Weapons. The Model Convention was drafted to demonstrate what an international treaty to eliminate nuclear weapons might look like. It was circulated for discussion by the United Nations in 1997.

I have moved the following motion in the House of Commons calling for Canada to actively support the negotiation and adoption of such a convention:

M-439 – September 25, 2000 – Mr. Blaikie (Winnipeg-Transcona) – On or after Monday, October 9, 2000 – That in the opinion of this House, the government should actively support the negotiation and adoption of an international treaty to eliminate all nuclear weapons based on the Model Convention on the Prohibition of the Development, Testing, Use and Threat of Use of Nuclear Weapons and on their Elimination that was circulated by the United Nations in 1997.

For more information about the Model Convention on Nuclear Weapons, see Security and Survival: The Case for a Nuclear Weapons Convention. A copy of this document is available at the following website: http://www.ippnw.org

Bill Blaikie, MP
NDP House Leader
International Trade Critic
Intergovernmental Affairs Critic
Member of Parliament for Winnipeg-Transcona

http://www.billblaikie.ca/war-e.php?task=view&articleID=86
Canada: House of Commons Report of the Standing Committee on Foreign Affairs and International Trade (SCIFAIT)

Canada and the Nuclear Challenge: 
Reducing the Political Value of Nuclear Weapons for the Twenty-First Century

Bill Graham, MP, Chairman
December 10, 1998

RECOMMENDATION 14

The Committee recommends that the Canadian Government intensify its efforts, in cooperation with like-minded States, such as our NATO allies, to advance the global disarmament and security agenda:

Canada should reaffirm its support for the nuclear Non-Proliferation Treaty as the centrepiece of the global nuclear non-proliferation regime and should reject any attempt to revise the Treaty to acknowledge India and Pakistan as "nuclear-weapon States" under it. It should also continue to strive to ensure that the nuclear-weapon States honour their commitments to a strengthened review process for the NPT, which will lead to an updated statement of Principles and Objectives for Nuclear Non-Proliferation and Disarmament at the 2000 Review Conference.

Canada should complete the process of ratifying the Comprehensive Nuclear Test-Ban Treaty as quickly as possible and urge all other States to do likewise. Should India and Pakistan refuse to accept the Treaty unconditionally, Canada should nevertheless encourage the international community to ensure the Treaty's legal entry into force.

Canada should play a strong role at the Conference on Disarmament in the forthcoming negotiations for a broad Fissile Material Cut-Off Treaty which will serve both non-proliferation and disarmament objectives.

Canada should support the establishment of a nuclear arms register to cover both weapons and fissile material as proposed by Germany in 1993.

Canada should support the call for the conclusion of a nuclear weapons disarmament convention.

http://ccnr.org/scfait_recs.html (emphasis added)

Canada: Government Response to SCIFAIT Recommendation 14

The Government considers it premature to enter into negotiations on a nuclear weapons disarmament convention. The Government also does however recognize and accept the potential, as well as the limits, of multilateral efforts to reduce and eliminate nuclear weapons over the short and medium term. It is in this context that Canada encourages the NWS to meet their responsibilities and deliver on their commitments. While it is clear that, for the foreseeable future, it will be up to the NWS to negotiate among themselves the reduction of their nuclear arsenals, Canadians and all members of the international community continue to have a deep and abiding stake in the process.
Canada expects the NWS to engage actively on this issue and to make further progress to reduce and to eliminate nuclear weapons.

The Government also recognizes that further nuclear disarmament and non-proliferation measures will not be achieved without substantial financial investment not only by the NWS but also by the international community as a whole.

Department of Foreign Affairs and International Trade, Government Response to the Recommendations of the Standing Committee on Foreign Affairs and International Trade on Canada’s Nuclear Disarmament and Non-proliferation Policy, April 1999.

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Operative Paragraph 18:

The General Assembly…

Affirms that a nuclear-weapon-free world will ultimately require the underpinnings of a universal and multilaterally negotiated legally binding instrument or a framework encompassing a mutually reinforcing set of instruments.…

UK: Comments on New Agenda Resolution, Operative Paragraph 18:

You asked about our understanding of the meaning of one particular paragraph in the New Agenda Resolution, operative paragraph 18. Our understanding is that this paragraph was deliberately drafted by the Coalition to accommodate both the belief that a nuclear weapon-free world would need to be underpinned either by a single comprehensive agreement (a Nuclear Weapons Convention, or similar), and the alternative view held by some that this could be achieved through a network of mutually reinforcing agreements. For its part, the Government accepts that, logically, the process of nuclear disarmament will ultimately lead to a Nuclear Weapons Convention to ban nuclear weapons, just as biological and chemical weapons are respectively banned by the Biological and Chemical Weapons Conventions. But clearly any such agreement will build upon the developing framework of bilateral and multilateral arrangements in this area.

Letter from Nigel Casey, Security Policy Department, Foreign & Commonwealth Office, to George Farebrother, Secretary, World Court Project UK, 20 December 2000.
UK House of Commons: Early Day Motion 652
NUCLEAR WEAPONS CONVENTION

Posted 18 April 2000. Mover: Laura Moffatt

That this House recognises that the only security from the threat of nuclear weapons is their global elimination under strict and effective international control; welcomes the fact that the United Kingdom has undertaken, under Article VI of the Nuclear Non-Proliferation Treaty, to pursue negotiations in good faith on effective measures relating to nuclear disarmament; endorses the view that the long-term viability of the non-proliferation regime requires the continued support of the United Kingdom; endorses the unanimous opinion of the International Court of Justice that there exists an obligation to pursue in good faith and bring to a conclusion negotiations leading to nuclear disarmament in all its aspects under strict and effective international control; welcomes the Model Nuclear Weapons Convention submitted by Costa Rica to the Secretary General of the United Nations on 17th November 1997 as a work in progress setting forth the legal, technical and political issues that should be considered in order to obtain an actual nuclear weapons convention; and urges Her Majesty's Government to initiate multilateral negotiations leading to the early conclusion of a nuclear weapons convention.

Followed currently by list of 104 signatories in alphabetical order:


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The Chinese delegation hereby submits the following proposals for inclusion in the report of Main Committee I and the final document of the 2000 Review Conference of the Parties to the Treaty on the Non-Proliferation of Nuclear Weapons:

1. The States Parties to the Treaty believe that the complete prohibition and total elimination of nuclear weapons and the realization of a nuclear-weapon-free world will remove forever the menace of nuclear weapons facing humankind, thus greatly enhancing international peace and security.

2. The States Parties believe that the process of nuclear disarmament is closely linked to the international security situation and the national security environment of various States. Therefore, the States Parties commit themselves to a new concept of common security based upon mutual trust, mutual benefit, equality and cooperation.

3. All the nuclear-weapon States Parties commit themselves to the goal of the complete prohibition and total elimination of nuclear weapons and to negotiate and conclude as soon as possible a convention on the complete prohibition of nuclear weapons.

http://www.reachingcriticalwill.org/NPTDocuments/mc1docs/chiwp.html (emphasis added).

UNGA Resolution 55/33 X (2000):
Follow-Up to the Advisory Opinion of the International Court of Justice on the Legality of the Threat or Use of Nuclear Weapons (Operative Paragraphs 1 & 2)

The General Assembly…

1. Underlines once again the unanimous conclusion of the International Court of Justice that there exists an obligation to pursue in good faith and bring to a conclusion negotiations leading to nuclear disarmament in all its aspects under strict and effective international control;

2. Calls once again upon all States immediately to fulfil that obligation by commencing multilateral negotiations in 2001 leading to an early conclusion of a nuclear weapons convention prohibiting the development, production, testing, deployment, stockpiling, transfer, threat or use of nuclear weapons and providing for their elimination.

Comments on UNGA Resolution 55/33 X (2000):

Stressing that the ICJ opinion was only advisory and not legally binding, the United States said the resolution used the ICJ conclusion as a justification for a nuclear weapon convention, which it could not support. Furthermore, the US stressed that it took its nuclear disarmament obligations seriously and that in its view, the ICJ opinion did not alter its obligations under Article VI of the NPT in any way. Japan abstained, saying that while it supported the ICJ advisory opinion, the resolution demonstrated the complexity of the topic. Referring to the resolution’s call for a nuclear weapon convention, Japan believed in taking practical steps before “jumping to conclusions”…

Costa Rica and Malaysia:

Working Paper Submitted to the 2000 NPT Review Conference

The Sixth Review Conference of the Parties to the Treaty on the Non-Proliferation of Nuclear Weapons…

Underlining the unanimous conclusion of the International Court that there exists an obligation to pursue in good faith and bring to a conclusion negotiations leading to nuclear disarmament in all its aspects under strict and effective international control…

Concerned that those States that operate unsafeguarded nuclear facilities and have not acceded to the Treaty on the Non-Proliferation of Nuclear Weapons, retain the nuclear-weapons option,

Affirms the requirement of States parties to fulfil their obligations under the Treaty and in accordance with the 1996 advisory opinion of the Court, and to that end:

1. The States Parties agree to commence multilateral negotiations leading to the conclusion of a nuclear weapons convention prohibiting the development, testing, production, stockpiling, transfer, use and threat of use of nuclear weapons and providing for their elimination under strict and effective international control, and to invite those States that have not acceded to the Treaty on the Non-Proliferation of Nuclear Weapons to join in such negotiations;

2. The States Parties agree to give consideration to the legal, technical and political elements required for a nuclear weapons convention or framework convention. Those elements may include:

   (a) Non-discriminatory general obligations, applicable to States and non-State actors, prohibiting the acquisition, development, testing, production, stockpiling, transfer, use and threat of use of nuclear weapons;

   (b) Interim control, protection and accounting of nuclear weapons and fissile material holdings;

   (c) Phases and steps for the systematic and progressive destruction of all nuclear warheads and their delivery vehicles;

   (d) An international organization to coordinate verification, implementation and enforcement under strict and effective international control;

3. The States Parties agree to take appropriate interim steps, including unilateral measures and the achievement of other mutually reinforcing bilateral, plurilateral and multilateral instruments to remove the role of nuclear weapons from security doctrines and to further the reduction and elimination of nuclear arsenals.

http://www.reachingcriticalwill.org/NPTDocuments/mc1docs/icjwp.html (emphasis added).

See further analysis of the ICJ resolution on page 15.
9. For many, deterrence is a legitimate provision, and for some it offers the preferred means of response to potential chemical and biological weapons threats. Others are concerned that the removal of nuclear weapons would require the development of enhanced conventional military (deterrent) capabilities, a situation which might serve to increase the frequency of warfare rather than to diminish it. There is a need to think about and to debate the nature of a future nuclear order, how it should be shaped and stabilised. It is likely to be based upon foreign policy considerations rather than those of defence alone or indeed the aims of the non-proliferation and arms control communities. Few would argue with the proposition that stable deterrence is essential on the road to disarmament, and that this constitutes a complex management problem which will require stable political relations if it is to be dealt with successfully.

10. The priorities to feature in such management effort should include: evaluating the wisdom of developing small nuclear weapons systems; reducing significantly numbers of tactical nuclear weapons; introducing de-alerting procedures. Some emphasise the need to place restraints on the future use of technology; policy should not be technology-driven. Consideration needs to be given to the future management and development of the nuclear industry and its potential impact upon weapons-related issues; for example, the design of future nuclear power plants should take account of non-proliferation and disarmament concerns.

11. For some, such steps do not go far enough. They propose the introduction of a Nuclear Weapons Convention (in due time) which would ban nuclear weapons worldwide. Such a convention (mirroring that already in place for chemical weapons) would involve: general obligations for all states; destruction of nuclear arsenals; ending the production of fissile material; destruction of delivery vehicles; introduction of adequate verification arrangements; promotion of transparency; a phased elimination of existing weapons; introduction of dispute-settlement arrangements. Some suggest that agreeing a timeframe for the introduction of the convention would facilitate the disarmament process; others question this view, arguing that the setting of deadlines will merely ensure that a number of countries do not participate in the project at all. In this context, it is worth noting that the achievement of these types of objectives is only likely over a considerable period of time, of perhaps half a century or more. A step-by-step approach seems most likely to yield the progress which will be necessary for the attainment of longer-term goals.

The International Security Information Service (ISIS-UK)
Briefing on UK Nuclear Weapons Policy, No. 1, July 1999

5. A Nuclear Weapons Convention

The process of negotiating a NWC would be long and uncertain. But that is, of course, no reason for not starting to discuss and refine it. It should be stressed that participation in such discussions does not imply that the final abolition of nuclear weapons has been adopted as a fixed or unchallengeable policy goal, regardless of circumstances. It would not be inconsistent with the cautious official argument of the UK Government, which is that the NWS should move incrementally to a much lower level of nuclear armaments, but that the zero option can only be contemplated when the world is a safer place. Nor does such participation require prior acceptance of the argument that failure to delegitimise nuclear weapons involves much greater risks from
unconstrained nuclear proliferation than complete abolition. Indeed, neither of these arguments could be made convincing without reference to just these practicalities, with all their attendant problems and uncertainties.

In any case, the path to “zero” must necessarily pass through a LSNW [low salience nuclear world]. Several moves towards this are on the official international agenda, for example in the START talks. Thus, the first steps envisaged in a NWC are already being debated inter-governmentally, and do not involve perilously novel concepts. Indeed, most of the particular issues to be discussed in these papers have long been familiar in debate about the future of nuclear weapons, whether towards a LSNW or further to a NWFW [Nuclear Weapon Free World]. A great deal of detailed consideration has been given, by governmental and non-governmental organisations, to a variety of practical procedures such as “de-alerting”, “dismantling”, “verification”, “monitoring compliance” etc., and to the associated qualities of “transparency”, “confidence-building”, “stability” and so on. By treating these as elements of a specific policy of establishing a NWFW (or a LSNW) we can bring out their real capabilities and how they relate to one another.

Moreover, one of the most difficult aspects of disarmament negotiations is the need to maintain mutually assured security and stability at every stage in a long drawn out procedure. As a chart and timetable for a path that leads ultimately to “zero”, any NWC would need to provide a flexible framework for debate and decision about stopping points, alternative routes, and how to cope with unexpected events along the way.

6. Galvanising Support for a Nuclear Weapons Convention

For any initiative towards a NWC to make waves in the public, hence political, domain the dry technicalities need translation into plausible vision. Only then will policy makers and governments focus on the great hopes rather than the (always inevitable) difficulties. Intergovernmental bodies such as the New Agenda Coalition and transnational NGOs such as Abolition 2000 are already beginning to stimulate action to this effect.

The extent to which the UK’s policy is directed along a “path to zero” demands a basic understanding of the main elements of a putative NWC, showing how they fit together into a coherent step-by-step programme as part of a co-ordinated multilateral process, involving elaborate and sophisticated negotiation. Although a NWC programme could only be carried out by international agreement, it would require national implementation at every stage. People in each NWS would need to understand and become committed to the successive steps affecting their own national nuclear capabilities and facilities. In other words, it would have direct implications for all aspects of UK NW policy. As a founder NWS, the UK cannot avoid responsibility for the future place of NW in human affairs: this responsibility includes treating the procedure for their eventual abolition as a serious long-term policy theme.

Professor John Ziman, On the Road to “Zero”? A long-term perspective on UK nuclear weapons policy, http://www.isisuk.demon.co.uk/0811/isis/uk/nuweapons/no1.html
**Response to the Model Nuclear Weapons Convention**

How does one define “complete nuclear disarmament?” The authors of the Model Nuclear Weapons Convention believe that it should cover everything – the elimination of nuclear weapons, their means of delivery, production and testing facilities; as well as the prohibition of use, research, development, testing, production, acquisition, transfers of nuclear weapons and their means of delivery, and a number of other obligations. If such an approach is taken, a convention would incorporate, aside from measures directly related to nuclear disarmament, measures envisaged in agreements already concluded (the NPT, the CTBT) or in possible future agreements (on cut-off, on no use, etc.). Such a comprehensive approach looks attractive, but is not realistic. It is impossible to negotiate such a monstrously large agreement, and there is no need to do so. During the course of the preparation of future negotiations, it would be useful to concentrate on those issues which are definitely not covered and will not be covered by any partial agreements, namely: (1) the elimination of nuclear warheads; (2) the elimination or conversion of their means of delivery, as well as precautions against the use of dual-purpose means of delivery, particularly of aircraft, for nuclear weapon purposes; (3) the prohibition of the development and production of nuclear warheads; and (4) the prohibition of the development and production of those means of delivery that can be used only for nuclear weapons purposes. It is clear that different methods of implementation and verification are required for each of these purposes.

Can the whole scope of nuclear disarmament be covered by one agreement (a convention or treaty) or are a number of agreements needed? A single convention would allow parties to envisage coherent stages for the gradual implementation of nuclear disarmament with fixed deadlines. On the other hand, the elaboration of a comprehensive convention would be an endless process, without practical results and with inevitable deadlocks. The bilateral process required a number of agreements aimed at reducing the nuclear threat and nuclear armaments. The achievement of results in a multilateral setting would be much more complicated and slow. That is why a piecemeal approach would be more practical: multilateral partial agreements on each stage of nuclear disarmament should be negotiated and concluded one by one, each one preparing the security and political conditions for the next agreement. Of course, this does not mean that the implementation of one agreement should be a pre-condition for the negotiation of the next one. The signing of one agreement could be a sufficient trigger for the next stage. It cannot be excluded that the implementation of a later agreement might overlap the implementation of a preceding one.

Here is an illustrative scheme for such an approach.

- **An agreement is negotiated on the further reduction, under international verification, of strategic armaments by the United States and Russia. It is accompanied by obligations on all nuclear weapons states to freeze the production and development of their nuclear armaments. Under this agreement all nuclear weapon states will exchange information about their nuclear arsenals, and this information will be checked through verification procedures. Those parties to the Convention which are not members of the NPT will incur obligations on nuclear non-proliferation and all parties to the agreement will be subject to obligations on the non-proliferation of missile technology.**

- **This agreement should also contain legally-binding obligations on the basic parameters of further measures as well as an obligation to negotiate the appropriate treaty language. The basic parameters would provide for the reduction by all nuclear weapon states of their nuclear armaments, both nuclear warheads and delivery systems of all ranges, including those which**
constitute for the United States and Russia the category of tactical nuclear weapons. Armament levels will be established on a pragmatic basis, with due account of geostrategic balances.

- As soon as the first agreement enters into force, the next one will be negotiated. In its turn, it should also include basic parameters for the following stage, with an obligation to negotiate treaty language on the basis of these parameters.

- The same procedures will be repeated again until the end of the process, at which time the nuclear weapon states will eliminate all their nuclear arsenals and all parties to the Convention, both nuclear and non-nuclear, will place all their nuclear activities under international verification.


Response to the Model Nuclear Weapons Convention

The Shape of an NWC

Any NWC will have to embrace a comprehensive approach by incremental steps within a multi-path process of negotiation. The formal provisions of a Convention will need to address many of the “nitty gritty” details associated with any treaty document of this type, such as dispute settlement, entry into force, duration, financing, etc. In these matters it could largely follow the example of the other similar conventions, such as the CWC [Chemical Weapons Convention].

There would also need to be detailed provisions for: verification procedures; control of nuclear-weapons-usable material; a timetabled programme of phases for implementation; an international agency to oversee implementation and compliance.

The central feature of the whole process would be its phased schedule of implementation. The MNWC, for example, sets out a 15-year programme. In brief, this sets out the following steps, timed in years from the entry into force of the Convention:

1 year: all nuclear weapons de-alerted and removed from deployment.
2 years: all nuclear warheads removed from delivery vehicles, and all production facilities closed down.
5 years: nuclear warheads reduced proportionately to fixed numbers, and all delivery vehicles destroyed.
10 years: all nuclear weapons-usable materials placed under international control and reactors using weapons-grade materials closed or converted.
15 years: all nuclear weapons destroyed.

This outline timetable needs to be kept in mind in all reading, debate or action relating to an NWC. Even with the addition of the years obviously required to get the Convention agreed in the first place plus the period before entry into force, it suggests that the path to abolition could be traversed in less than a quarter of a century.

It is true that some of the measures envisaged for the earlier phases are already under discussion in various international fora and amongst NGOs. The practical problems of disentangling these overlapping negotiations will obviously require close attention by policy-makers and officials as
they try to set up a version of a NWC, but they should not be allowed to obscure the general picture.

Taken separately, measures such as de-alerting, declarations of no first use, fissile material cut-off, etc. can be significant steps towards the abolition of nuclear weapons. But it is their role in the comprehensive-incremental programme of the Convention that gives them collective force. This programme would need to take account of the interconnections between the various components of the global nuclear weapons complex, and suggest how they can be safely phased out in an orderly manner. It must allow, for example, for the prevention of further nuclear proliferation and for the protection of international security at every step towards "zero". The proposed timetable is to some extent arbitrary, and probably wildly optimistic. What is important is the way that it weaves together successive and parallel "denuclearisation" measures into a coherent process designed to sustain mutual confidence and security right to the end.

Any NWC is likely to recognize that this process is primarily the responsibility of the NWS. But it should also recognize that it could not be carried out in practice by even the most powerful of them acting alone, by individual NWS acting independently, or indeed without obtaining the agreement of the NNWS [non-nuclear weapon states], whose interest in international security is just as strong. As its other formal provisions will require, the implementation of the Convention – including the vital issue of the disposal of nuclear weapons-usable materials such as plutonium and highly enriched uranium – will need to be co-ordinated, overseen and verified, from the beginning, by an international agency. Indeed, these provisions need to be fully understood by the concerned public, since they are as essential to the whole process as the orderly timetable that they enable.


http://www.isisuk.demon.co.uk/0811/isis/uk/nuweapons/no1.html

Fissile Materials Cut-off and the Nuclear Weapons Convention

It has been claimed that an FMC [fissile materials cut-off] would limit the size of potential nuclear arsenals. The arsenals of the N5 [five official nuclear weapon states], already quite large, are not going to be reduced by an FMC. The size of potential nuclear arsenals will be limited only if the FMC is part of a Nuclear Weapons Convention in which all the unsafeguarded stocks of fissile material (and not merely those considered surplus to military needs), including those that will become available due to dismantling of warheads, are transferred to non-weapons use under international safeguards. Such a transfer is in any case needed in order to make the nuclear arms reductions under treaties like START irreversible; and the USA and Russia should enter into a bilateral fissile material cut-off treaty (including the fissile material available from dismantling of warheads under the START process), to solemnify their moratorium on the production of fissile material.

The Road to a Nuclear Weapons Convention: 
An Analysis of the ICJ Follow-Up Resolution

In October 1996 Malaysia introduced a draft resolution to the United Nations General Assembly entitled “Follow-up to the advisory opinion of the International Court of Justice on the Legality of the Threat or Use of Nuclear Weapons.” The resolution welcomes the International Court of Justice (ICJ) conclusion that “There exists an obligation to pursue in good faith and bring to a conclusion negotiations leading to nuclear disarmament in all its aspects under strict and effective international control,” and calls on “States to fulfil immediately that obligation by commencing multilateral negotiations in 1997 leading to an early conclusion of a nuclear weapons convention prohibiting the development, production, testing, deployment, stockpiling, transfer, threat or use of nuclear weapons and providing for their elimination.”

The Malaysian resolution provides a framework for moving towards nuclear disarmament – one that is supported by most, but not all, states. An analysis of the approach called for in the resolution would be useful to ascertain its validity and usefulness to the disarmament process.

Disarmament Obligation and a Nuclear Weapons Convention

Malaysia noted that “the judges of the ICJ have made it very clear that the international community has … an obligation to pursue negotiations leading to nuclear disarmament in all its aspects,” and that a nuclear weapons convention would provide the comprehensive approach to nuclear disarmament that they envisaged.

The concept that a nuclear weapons convention will be required to complete the disarmament objective has been endorsed by the UK which has noted that “logically the process of nuclear disarmament will ultimately lead to a Nuclear Weapons Convention, just as biological and chemical weapons are respectively banned by the Biological and Chemical Weapons Conventions.”

The 1998 declaration by the New Agenda Coalition, while not specifically calling for a nuclear weapons convention, argued that “the maintenance of a world free of nuclear weapons will require the underpinnings of a universal and multilaterally negotiated legally binding instrument or a framework encompassing a mutually reinforcing set of instruments,” basically describing a nuclear weapons convention.

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3 The United Nations General Assembly adopted the 1996 draft resolution, as well as similar ones in 1997, 1998, 1999 and 2000, by sizeable majorities. Resolution 53/77 W, for example, was adopted on December 4, 1998 by 123 in favor, 23 abstentions and 23 against.


The Element of Time

There has been some criticism, particularly by the United States, that the Malaysian resolution includes an unrealistic call for the elimination of nuclear weapons to be achieved within a specified framework of time.\(^7\) A time-bound framework for nuclear disarmament has been proposed by the Group of 28 ("G28").\(^8\) The Malaysian resolution, however, unlike the G28 proposal, merely calls for the commencement of negotiations leading to the conclusion of a nuclear weapons convention and “does not seek to impose a time-bound framework on these negotiations.”\(^9\) It does not specify target dates for the conclusion of the convention nor for the elimination of nuclear weapons under a convention.

A nuclear weapons convention itself, once negotiated, would include a timeframe for the elimination of nuclear weapons. However, the approach for this timeframe differs markedly from that of the G28 time-bound framework. It would need to be agreed by states negotiating the convention, including the nuclear weapon states, rather than imposed prior to negotiations. It would likely be based on entry into force of the convention and on successful achievement of a phased program of disarmament steps, rather than on specific dates. The Malaysian resolution does call for the “early” conclusion of negotiations, but explains this by saying that there is a “window of opportunity which should not be lost to the international community. It should be grasped – and grasped firmly – as it might not present itself again.”\(^10\)

Step-by-Step or Comprehensive Approach

There has been some confusion as to whether a step-by-step or comprehensive approach is being suggested in the Malaysian resolution. The US has argued that the resolution envisages a comprehensive approach to nuclear disarmament, and that this is unrealistic.\(^11\) Instead the US supports a step-by-step approach including bilateral reductions in stockpiles, entry into force of the Comprehensive Test Ban Treaty, and negotiations on a treaty to cut off production of fissile materials as the next steps.\(^12\)

New Zealand disagrees that the nuclear weapons convention approach is necessarily opposed to a step-by-step approach, and believes instead that it “allows for a programme of intermediate steps towards the final goal of a convention banning nuclear weapons.”\(^13\) Malaysia has clarified this intention by stating that “[t]he draft resolution specifically mentions negotiations ‘leading to’ a nuclear weapons convention and not ‘on’ a nuclear weapons convention, thereby allowing for the kind of steps that the nuclear weapon states themselves are committed to support.”\(^14\)

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7 USA explanation of vote before the vote, UN First Committee, 10 November 1997.
8 “G28 Programme of Action for Elimination of Nuclear Weapons” CD/1419, 7 August 1996.
9 New Zealand explanation of vote, UN Disarmament Committee, November 14, 1996.
10 Agam, November 1996.
11 US explanation of vote on draft resolution L.45, UN Disarmament Committee, 10 November 1998.
13 New Zealand explanation of vote, UN Disarmament Committee, November 14, 1996.
The Model Nuclear Weapons Convention\(^\text{15}\) provides an outline of how disarmament steps could fit into a comprehensive framework. As indicated by Malaysia, such a framework does not require complete agreement before some of the steps can be achieved. If greater attention is given to the comprehensive framework, however, it will be easier to achieve such steps. It appears that this is the reason that Malaysia has gone beyond merely calling for negotiations leading to a nuclear weapons convention, and outlined specific elements required in such a convention at the 2000 NPT Review Conference.\(^\text{16}\)

**Addressing the Full ICJ Decision**

Some countries, including the United States,\(^\text{17}\) criticize the Malaysian resolution for being highly selective and ignoring parts of the ICJ. While the resolution notes the full opinion of the ICJ, Malaysia admits that it concentrates on the conclusion affirming the disarmament obligation. Malaysia justifies this focus by saying that the disarmament obligation conclusion was unanimous, has a very clear meaning as to the required action, and clearly fits a mandate of the UN General Assembly – to pursue disarmament. In response to the claim that this does not do justice to the remainder of the opinion, however, Malaysia added an additional operative paragraph in 1997 calling on all states to inform the UN Secretary-General of progress they had made in implementing the ICJ decision and on nuclear disarmament. This provision opens the door for States to report on their response to the full ICJ decision – not just the disarmament obligation.

More significantly however, it would appear that the nuclear weapons convention approach is also the most appropriate response to the other major conclusion of the ICJ, i.e., that the threat or use of nuclear weapons is generally illegal. In commenting on this conclusion the ICJ noted that “treaties dealing exclusively with acquisition, manufacture, possession, deployment and testing of nuclear weapons, without specifically addressing their threat or use… could therefore be seen as foreshadowing a future general prohibition of the use of such weapons,”\(^\text{18}\) and that “in the long run, international law, and with it the stability of the international order which it is intended to govern, are bound to suffer from the continuing difference of views with regard to the legal status of weapons as deadly as nuclear weapons. It is consequently important to put an end to this state of affairs: the long-promised complete nuclear disarmament appears to be the most appropriate means of achieving that result.”\(^\text{19}\)

The nuclear weapons convention proposed in the Malaysian resolution would contain both a prohibition on threat or use and a program for elimination of nuclear weapons, as envisaged by the ICJ.

**Conclusion**

Malaysia has noted that “the road towards the total elimination of nuclear weapons will be a long and arduous one and would best be traveled through a series of well-defined stages accompanied by proper verification and control mechanisms.” In traveling down that road, it is important to have some idea of the destination – some type of road map. In this way, potholes and wrong turns can be

\(^{15}\) UN Document A/C.1/52/7


\(^{17}\) US Explanation of Vote, UN Disarmament Committee, November 14, 1996.

\(^{18}\) ICJ Advisory Opinion, para. 62.

\(^{19}\) ICJ Advisory Opinion, para. 98.
avoided, and requirements for the journey can be well planned in advance. A purely step-by-step approach is like traveling in an old jalopy with a broken steering wheel, with no idea of the final destination, and with a questionable commitment to even reaching it. The nuclear weapons convention provides such a road map – not yet perfect or complete – that can assist the international community to move steadily and irrevocably towards nuclear disarmament.

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Timetable for a Nuclear Weapon Free World

I appreciate, but find ultimately unconvincing, the arguments that led the National Academy group, as well as the Canberra Commission and the Stimson Center Project on the Elimination of Weapons of Mass Destruction, to refrain from specifying a specific timetable. They are right to argue that the relevant variables are too many and the uncertainties too great to specify a timetable in detail. But an overall target is required to give meaning to the “unequivocal commitment” to elimination of nuclear weapons called for by the Canberra Commission (or the “serious commitment” called for by the Stimson Center group) and to give impetus to efforts to create the conditions that prohibition will require.

Any target will naturally be subject to revision – either more or less time might prove to be required – but there is at least a certain symmetry in the proposition that nuclear arsenals should be able to be built down in about the same amount of time that was used to build them up. (I proposed 2048 as the outer limit for getting to zero in a speech at the 150th anniversary conference of the American Association for the Advancement of Science in 1998, where the theme was looking backwards and forwards fifty years. On the other hand, according to the Natural Resources Defense Council’s tabulation – the best unclassified source – global nuclear stockpiles peaked in 1986 at 69,500, declining subsequently to about half that number in 1998; if the entire build-down took only as long as the build-up, 41 years, the world would be back at zero by 2027.) There is merit, in any case, in the idea that the target for achieving a prohibition should be within the lifetimes of many people now living.

The Idea of a Nuclear Weapons Convention: A Workshop at the UK CND Annual Conference

At this year’s Campaign for Nuclear Disarmament (CND) Conference in Leeds, England, (Sept. 16-17, 2000) and on behalf of Abolition 2000 UK, I presented a workshop on the idea of a nuclear weapons convention. One of the most effective plenary talks at the conference, by Lindis Percy of the Campaign for Accountability of American Bases, described her determined acts of civil disobedience against the use of communications sites in the North, at Fylingdales and Menwith Hill, for US national missile defence (NMD) purposes. The subsequent NMD workshop was therefore a crowd-puller, whereas the NWC workshop spoke to a more select gathering.

I outlined the current status of the Model NWC. In the UK Parliament, MP Laura Moffatt’s Early Day Motion 652 had attracted more than 100 signatures, but will need reintroduction in the next Parliamentary session. A Commons Committee recently reported on Weapons of Mass Destruction. Critical of NMD preparations, they nonetheless accepted government arguments for retention of Trident without comment.

I summarised the current draft Model NWC as a set of “obligations.” These were: (i) national obligations of the states party to the treaty – both negative (not to use, threaten, develop, or deploy nuclear weapons), and positive (to destroy existing nuclear weapons, to submit to inspection, and to entrench NWC provisions in domestic law); and (ii) personal obligations of citizens of the states party – both negative (not to engage in development or deployment of nuclear weapons) and positive (to report violations of the NWC by their state).

Controversially, sanctions in both domestic and international law will render those who act contrary to the NWC, or who fail to report such actions, liable to prosecution either locally or internationally. A new agency will organise disarmament and will set up compliance and verification procedures. In the event of serious problems, the UN Security Council will face the task of securing compliance. Substantial problems were seen as standing in the way of development of such an NWC. It changes the concept of security (“And you all know security is mortals’ chiefest enemy” – Macbeth); it abolishes the idea of deterrence; it carries with it the difficulties of possible “breakout” by states or groups; and it increases the disposal problems (primarily of long-lived plutonium).

I divided the dozen attendees into two parallel group sessions to discuss: (i) the “internal” NWC problems (surmountable or insurmountable?) including the breakout problem, verification procedures, radioactive and other munitions disposal, and securing a realistic timeframe; and, (ii) the “external” NWC problems: getting the nuclear weapons powers – UK, France, Israel, India, Pakistan, Russia, China, the USA and NATO – to listen: what are the similarities and differences?

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21 See page 7.
Each group selected a rapporteur and a “Devil's Advocate.” The latter argued against an NWC and presented the case (in the first session – played vigorously by Bruce Kent) that an NWC is impossible and (in the second session – current CND treasurer Monica Frisch relished her role as defence spokesperson for a variety of nuclear powers) that nuclear weapons are an integral part of the strategies that have kept the peace for 55 years. In the group reports it was apparent that deterrence is a declining concept (hence perhaps the decreased US interest in the ABM treaty), whereas the status and nationalistic roles of nuclear weapons have increased. France, unlike the UK, partially defines its national identity by nuclear weapons possession. China’s support of an NWC in the UN General Assembly was seen largely as a political tactic to retain third world influence. India and possibly Pakistan (despite the “Islamic” bomb) could be persuaded to become parties to an NWC if NATO were on board the NPT in a more meaningful way.

Surprisingly the group was most sympathetic (if that be the word) to the Israeli bomb, Israel being the sole nuclear weapon state that can convincingly argue a direct threat from its neighbours of the kind the ICJ almost allowed as a reason for retention. An important counterexample to the prestige issue is given by New Zealand, where the situation is inverted. Even right wingers are proud of an anti-nuclear New Zealand and support prohibitions such as those keeping nuclear weapons capable vessels away from New Zealand ports.

The “internal” problems group saw technical problems as possibly more important than political ones. Of the latter, they believed that job and conversion issues would be more publicly salient than those of defence and national prestige, at least here in the UK. The proposed NWC deals with the conversion issue, and the need for expertise in verification and disposal may secure a convergence of interests between the nuclear technologists and the disarmers. Like their “external” colleagues the “internal” problems group felt that deterrence was now recognised as a myth (see Arundhati Roy) but that there was a need for public education on this issue. Breakdown of the unitary Soviet state, the rise of various movements prepared to use violence (“terrorists”), and diversification and miniaturisation of weaponry were seen as making the “breakout” problem more difficult as time went by. This argued for an early start on NWC negotiations.

Later in the meeting, John LaForge of Nukewatch and Project ELF spoke. The hi-tech Trident programme is dependent upon extra-low frequency sites in the forests of Wisconsin – wires between wooden poles. Demonstrators cut down the poles, blank the Trident computer screens, and then call the sheriff to arrest them. In some jurisdictions, the harshness of US criminal law has led to such civil disobedience being punished severely. Philip Berrigan, 76 years old, was recently sentenced to several years’ imprisonment for a symbolic act of protest. LaForge’s talk combined technical and legal information with a comparative analysis of campaigns on both sides of the Atlantic and the moral issues. It was one of the best events at the meeting, and underlined the distance we need to travel to change political and public opinion as to what is legal and what illegal.

Both lead and second locomotives broke down on the train journey home. I waited for my small quota of complimentary coffee behind two women discussing the Leeds conference they had attended. They then heard that I too had been a conferee. We introduced ourselves. It quickly became evident that there had been two such events that weekend. Theirs was a conference on UFOs. I could not refrain from remarking that it was obviously an open question as to which of us had participated in the more fanciful event.

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Are We on the Way to Nuclear Zero? 
Some Preliminary Conclusions from the Current Debate

Since complete nuclear disarmament is intended to reform the world security architecture, it can hardly be achieved through a single international treaty. A series of measures would have to be negotiated and carried into effect in the course of what is bound to be a complex process of unpredictable length. The required negotiations need not be conducted in one forum. It would be more efficient to use several fora – open-ended or composed of states directly concerned – functioning simultaneously, without time constraints.

In order to start the disarmament process leading to the abolition of nuclear weapons, it would be necessary, in the first place, to render the nuclear non-proliferation regime universal and to ensure the enforcement of the non-proliferation norms. Nuclear weapon tests would have to be definitively and universally banned, the production of fissile materials for explosive devices stopped, further proliferation of nuclear delivery vehicles prevented, the establishment of new nuclear weapon free zones encouraged, and the use of nuclear weapons prohibited. Nuclear energy systems lending themselves readily to nuclear weapon production would have to be placed under international management. Tactical nuclear weapons would have to be eliminated prior to, or simultaneously with, drastic reductions of strategic nuclear weapons, and compliance with the prohibitions on other weapons of mass destruction – chemical and biological – ensured.

As a result of the series of incremental steps specified above, the existing nuclear forces could be brought down to low or even very low levels. Given the inequalities of states in conventional armaments, a problem would then arise as to how to proceed to the final elimination of nuclear weapons, for nuclear forces, even relatively small forces, are considered by some nations as a counterbalance to the superior conventional forces of their adversaries. A fully equitable solution to this dilemma might require the abolition of conventional weapons as well. Resuscitating the utopian idea of general and complete disarmament, however, would lead nowhere. A more realistic approach would be to bring about radical overall reductions of conventional armed forces and armaments, coupled with deep cuts in military production and spending, so as to achieve at least rough regional military balances. Such measures – to be based on generally agreed criteria – should result in force structures significantly minimizing the offensive capabilities of states.

Among the obstacles to nuclear disarmament most often cited are the difficulty to verify compliance with the obligation to eliminate all nuclear weapons and nuclear-weapon components, as well as the impossibility to “disinvent” these weapons. It is true that no verification can be absolutely foolproof, but full transparency and sophisticated technical means of supervision could render the probability of a nuclear disarmament treaty violation very small. In particular, strict international verification of all stocks of fissile material usable in nuclear weapons, and of all facilities producing these materials for peaceful uses, would make clandestine development of nuclear-weapon capabilities practically impossible. The effectiveness of a technical control system could be significantly enhanced by using so-called societal verification, as proposed by Professor Joseph Rotblat, a Nobel Laureate. This would mean that all citizens, not only experts, would be called upon to ensure the integrity of the treaty, and each
member of the community would become its custodian. Signatory states would be required to pass national laws making it the right and duty of their citizens to notify an international verification authority of any preparation for a breakout from the treaty. Societal verification would, of course, be possible only in democracies tolerating transparency in military affairs, open discussion of security issues, and unhampered activities of the mass media. Democratization of the political systems of at least the most powerful states is an indispensable requirement for general and complete nuclear disarmament.

It is also true that nuclear weapons cannot be disinvented. Indeed, the know-how and the capability to rebuild them cannot be eliminated. This, however, is not a reason for them not to be outlawed. Chemical and biological weapons – much easier to manufacture than nuclear weapons – cannot be disinvented either, and yet they are banned under international conventions.

Nuclear disarmament could not take place in a political vacuum. The deep-rooted suspicions of bad faith among nations would have to be dissipated through confidence building. This is a condition for creating a co-operative relationship among the great powers, a relationship necessary for common action against emerging proliferators of nuclear and other weapons of mass destruction, and also against one of their own number that may secretly retain or reconstruct such weapons. This is also a condition for avoiding nuclear powers’ involvement in regional disputes which should be settled by regional security organizations. Given the inadequacy of the existing international security arrangements, the UN conflict-resolution and peace-keeping capabilities would have to be strengthened through an appropriate revision of the UN Charter. States must become persuaded that the possession of nuclear weapons is a liability rather than an asset and that a nuclear-weapon-free world will be safer than a world with nuclear weapons.

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The Meaning of Zero

Support for elimination of nuclear weapons has expanded in the post-Cold-War period to far beyond the traditional abolitionist constituency; ... however, this wider support rests on an almost equally wide range of interpretations about what elimination means, implies, and requires.

These variations and ambiguities about the meaning of zero are perhaps an inevitable legacy of a half-century debate, involving a constantly changing cast of characters in a constantly changing world, about an issue that is at once subtle, complex, and complexly connected to the ways the world is changing....

Law As a Process

It is often argued that because international law is based primarily on the consent of states, it is ineffective. Realists will argue that governments make decisions in the international arena that are based on political and economic incentives or pressures, and will only pay heed to their obligations under international law when it serves national interest.

This view, however, is misconceived. The fact that international law is not always complied with or may not be enforceable in certain situations does not diminish its validity or effectiveness. In addition, international legal obligations do play an important part in the governmental decision making process and have done so for thousands of years.

International law arguably plays a dual role in international relations. First, in its more recognizable guise, it codifies and systematizes required behaviours of states in their relations with each other. Second, the development of international law, the creation of international institutions, and the implementation of legal mechanisms all have a normative impact on the global political climate. These developments, institutions, and mechanisms help to limit or broaden the range of politically acceptable actions. The consequent changes in political decision making can in turn help to increase the effectiveness of a particular aspect of the law as more and more governments begin to act as if they were bound by such a rule. This process may not go so far as to develop customary law but will still serve to strengthen and validate a law.

Thus, international law should be seen not as a static but as a dynamic entity – as part of a wider normative process rather than as an autonomous regime. This notion was clearly recognized by Judge Weeramantry in his dissenting opinion in the July 8, 1996 advisory opinion of the International Court of Justice (ICJ), The Legality of the Threat or Use of Nuclear Weapons. Referring the Court’s advisory opinion on apartheid, Judge Weeramantry stated:

The Court’s decision on the illegality of the apartheid regime had little prospect of compliance by the offending government, but helped to create the climate of opinion which dismantled the structure of apartheid. Had the Court thought in terms of the futility of its decree, the end of apartheid may well have been long delayed, if it could have been achieved at all. The clarification of the law is an end in itself, and not merely a means to an end. When the law is clear, there is a greater chance of compliance than when it is shrouded in obscurity.21

Thus, the Court’s decision in the apartheid case was effective as part of a greater normative process. By clarifying the law on apartheid it helped to clarify both a legal and moral framework against which governments could measure actions and political decisions on the issue.

In a similar way, the 1996 advisory opinion has been effective as a normative benchmark in the political arena with respect to the issue of nuclear disarmament. In that case, the Court held that,

based on an examination of the law, the “use of nuclear weapons would be generally contrary to the rules of international law applicable in armed conflict, and in particular the principles and rules of humanitarian law” and that any use of a weapon must comply with the international humanitarian law. Yet the Court was unable to “conclude definitively whether the threat or use of nuclear weapons would be lawful or unlawful in an extreme circumstance of self-defence in which the very survival of a State would be at stake.” While the 1996 advisory opinion was not as definitive or as clear as many would have liked, the end result was that the law relating to nuclear weapons was clarified to a much greater degree than had previously been the case.

The recent developments in the regime of international law relating to nuclear weapons such as the 1995 indefinite extension of the Treaty for the Non-Proliferation of Nuclear Weapons (NPT), the 1996 advisory opinion, the negotiation and conclusion of a Comprehensive Test Ban Treaty, and the functioning of the NPT review process, have all influenced the political decision making process relating to nuclear disarmament. Some of the effects of these developments and mechanisms are evident in the agreements, compromises and the language of the final document of the 2000 NPT Review.

The treaty making process itself can also be instrumental in the development of norms. The discussion, negotiation, and drafting that precede the conclusion of a treaty can help to influence political decision making on a particular issue long before that treaty becomes law. On this view, the Model Nuclear Weapons Convention (NWC) can serve a dual purpose as both as a means to influence political decision making with respect to further nuclear disarmament and as the basis for negotiations on an international convention prohibiting nuclear weapons and providing for their verified elimination. The former role of the NWC may be its greatest contribution to nuclear abolition. If used as a tool to explore the critical legal, political, and technical issues of complete nuclear disarmament at various levels of diplomatic discussion, it may help create the political climate necessary for a universal convention banning nuclear weapons to be legally effective.

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Trident in the Dock:
Women Contest the Legality of Nuclear Weapons

In June of 1999, three women decided to take international law into their own hands. Packing a picnic, warm clothes, and a few hammers, Ellen Moxley, Angie Zelter, and Ulla Roder set out on a short boat ride that would initiate a legal contest against the presence of Trident in Scottish waters. The destination of the women’s journey was the *Maytime*, a floating laboratory in Loch Goil. Once there, they boarded the vessel and began their work of destroying machinery and data that maintains the UK’s Trident nuclear weapons system.

The women collected research files and computer equipment, which they then tipped overboard, into the loch. When they finished their work they telephoned their support partner, Helen Steven, and sat down for a cup of tea. Helen contacted the media to tell them that non-violent protesters had occupied the *Maytime*. The media phoned the Ministry of Defence, and so began an action to prove (again) the illegality of nuclear weapons.

The police, eventually, did arrive, and the women were arrested and later incarcerated. After spending four and a half months in prison, they stood before Sheriff Margaret Gimblett at Greenock Court. In defense of their actions, the Trident Three cited International Law and the 1996 International Court of Justice advisory opinion which found that the threat or use of nuclear weapons would “generally be contrary to the rules of international law.…”

To the UK Government’s chagrin, the women were acquitted on all charges. Sheriff Gimblett ruled that they had acted in accordance with international law and out of necessity. The court understood that their smaller crimes of trespass and destruction of private property were initiated to contravene a greater crime: the readiness of the Trident fleet, which constitutes the threat of its use. The court’s ruling conceded that British nuclear weapons are illegal under international law. Shortly after the three women were released from prison, the UK Government contested the verdict and brought the case to the High Court in Edinburgh.

It is not lost on the knowing observer that this appeal was brought by a government that, when in opposition, declared a unilateral commitment to nuclear disarmament. When “New Labour” achieved electoral rule in May of 1997, however, it appeared that they had undergone a change of heart. One of their inaugural initiatives was to commission a new Trident submarine. Thus, the heady days in government have proven little contest to former anti-nuclear principles, and the CND memberships of Prime Minister Tony Blair and Foreign Minister Robin Cook have been relegated to the attic boxes of history. But pending still, is the outcome of the Lord Advocates Reference.

Underway in the Scottish High Court in Edinburgh, Lord Prosser and two other High Court Judges have been hearing defense of international law as a means to prove the illegality of nuclear weapons. Angie Zelter, representing herself, understands the rule of law and has submitted weighty testimony drawing on the International Court of Justice advisory opinion, international humanitarian law and the Nuremberg Principles.

“It’s a question of our relationship with each other and with this fragile, delicate earth.”
— Ellen Moxley
Having heard the evidence, the judges are expected to give their verdict in early 2001. If the Lords rule in favor of the Trident Three, the Labour Government will have a logistical struggle. Because Scotland is now under “home rule,” charged with its own Parliament, the UK Government may be forced to move its illegal Trident fleet from Scottish waters. More than 80% of those polled in Scotland do not want British nuclear weapons based in their home country. In fact, during the first Scottish election in several centuries, which occurred in May 1999, the Scottish National Party ran with the campaign promise to do away with the Trident menace. If the Lord Advocates Reference finds nuclear weapons to be illegal, this will present no small task for the government in London, considering that the entire UK fleet is based in Scotland.

The precedent that may be set in the High Court in Edinburgh could present substantial obstacles for the international nuclear fraternity. As such, the Trident Three are on course to change history. What started with a picnic on the Maytime might well initiate an actual process of nuclear weapons’ elimination.

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The Four Questions Lodged by the Lord Advocate in his Petition, 21st Jan 2000

1. In a trial under Scottish criminal procedure, is it competent to lead evidence as to the content of customary international law as it applies to the United Kingdom?

2. Does any rule of customary international law justify a private individual in Scotland in damaging or destroying in pursuit of his or her objection to the United Kingdom's possession of nuclear weapons, its action in placing such weapons at locations within Scotland or its policies in relation to such weapons?

3. Does the belief of an accused person that his or her actions are justified in law constitute a defence to a charge of malicious mischief or theft?

4. Is it a general defence to a criminal charge that the offence was committed in order to prevent or bring to an end the commission of an offence by another person?


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Scottish High Court Ducks Trident Issue

Today the High Court of Justiciary in Scotland appears to have failed to take a good opportunity to challenge the illegality of the UK’s Trident nuclear weapon system when it answered in the negative four questions set by the Lord Advocate in relation to the acquittal of the “Trident Three” by Margaret Gimblett.

Trident Ploughshares Press Briefing, March 30, 2001
http://www.gn.apc.org/tp2000/prel/prel01/r010330.htm

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24 See the text boxes following this article.
Confusion Confounded: The High Court’s Opinion on the Lord Advocate’s Reference in the Greenock Case

“It has to be observed,” said the court in paragraph 56 of the opinion it handed down on March 30, 2001, “that there may be an important issue which is not disposed of” as a result of the Crown’s failure to challenge the justiciability “in this court” of the legality of the deployment of Trident II. That issue is whether the position taken by Lord Reid in 1964 in Chandler v. Director of Public Prosecutions, i.e., that no one is entitled to challenge in court “the disposition and armament of the armed forces,” was correct then and is correct now. The Lord Prosser, Kirkwood, and Penrose leave the reader of their opinion in little doubt as to where they stand on this issue: Not only do that call attention to it in par. 56 with an extensive quote from Lord Reid, but they return to it in pars. 58 and 60, and significantly, in the concluding paragraph of their opinion, in the following terms: “We have grave misgivings as to the justiciability of the issues which we have been asked to deal with, in relation to defense policy and the deployment of the Trident.”

Having thus aligned themselves with the view that the deployment of weapons, even those which may be illegal under international law, is not subject to judicial challenge, it is not surprising that the judges devoted their opinion to attempting to show that, in any case, the illegality of Trident II had not been conclusively proven and procedural errors had been committed by the trial court. It was not enough to bury the ability of three courageous women to exercise their Nuremberg obligation to prevent the commission of crimes against humanity; the coffin had to be nailed tight....

The court could...have drawn some conclusions from the “unequivocal undertaking” given by the nuclear powers, including the UK, at the end of the quinquennial NPT review conference last year, “to accomplish the total abolition of their nuclear arsenals.” That it did not do so is a matter more for regret than surprise.

What is surprising, however, is the court’s novel theory, in par. 95, that humanitarian law does not apply in time of peace. Saddam Hussein will be pleased to hear that attempts to discourage him from producing weapons of mass destruction lack legal justification because he is not currently engaged in armed conflict (although he may be technically in a state of war with a number of countries). Surely some distinction must be drawn between those parts of humanitarian law, like the mistreatment of prisoners, which by definition apply only to the conduct of hostilities, and preparations for war, including the manufacture and deployment of illegal weapons.

In sum, the court not only failed to find justification in the narrow sense of the term, but justice in the broad sense.

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Section 2. Nuclear Choices

Introduction

A collective choice to pursue nuclear disarmament requires changing some patterns that many see as human nature, such as inherent aggression or a constant drive for domination. The concept that violent confrontation is inevitable or must be deterred by threat of greater violence is at the root of national security policies such as deterrence and force projection. This thinking might actually represent prevalent human mentality, as supporters claim. Still, it is fundamentally a choice.

To base security on doctrines of force, domination, threat, and massive militarization is to choose, and not out of rational calculations of survival in an interdependent world but out of weakness and cowardice. It is to react to threats with fear and familiar, therefore predictable, shows of aggression, to seek domination rather than diversion or deliberate and creative action. It is simultaneously tragic and tedious. Another choice is to confront conflicts directly while laying down the weapons. As a matter of global survival this means disarmament.

Disarmament is a choice and a gesture in the direction of healthy human evolution. Breaking cycles that appear to have permeated recorded history means acting in constructive new ways as a sentient and conscious species. Key choices hang in the balance now. Some of these choices are spelled out in the contributions to this section.

Martin Butcher explains the motives behind the current drive for “mini-nukes” in the United States and points to efforts to challenge this drive. Dan Plesch discusses US National Missile Defense plans with attention to the underlying issues and proposes a way to refocus the debate. Hui Zhang adds the Chinese perspective to this issue and discusses the choices that will shape China’s response. Kevin Martin addresses the choices behind National Missile Defense from the moral perspective.

Felicity Hill looks beyond the crucial choices about nuclear weapons that emerged from the 2000 Non Proliferation Treaty Review Conference and suggests what their implications for Realism might be. The project “Moving Beyond Missile Defenses,” the Uppsala Declaration on Nuclear-Weapon-Free Zones, and the Interim Charter of the All-India National Convention for Nuclear Disarmament and Peace are examples of ways to implement the choice to disarm.
The Military, the Labs, and the Republican Party Conspire to Bring Us “Modern” Nuclear War

The threat of nuclear war is still with us, though the Cold War is over. The scenarios are shifting, however, and rather than massive exchanges of strategic nuclear weapons, it is more likely that the actual nuclear use would be of tactical nuclear weapons in theater wars.

The weapons labs and the “Dr. Strangelove caucus” in Congress have teamed up to promote the manufacture of so-called mini-nukes. These small nuclear weapons would be especially dangerous since the military would regard them as “usable” in a wide range of circumstances where new “threats” are said to justify new weapons programs. Iraq, Iran, Osama bin Laden, and North Korea are the terrorist demons, said to wield weapons of mass destruction, who provide the latest justification for maintaining a US nuclear arsenal for the next century at least.

Lab pleas for a new style nuclear arsenal has backers in Congress. In early 2000, Senators John Warner (Republican-Virginia) and Wayne Allard (Republican-Colorado) inserted a provision into the Fiscal Year 2001 Defense Authorization Bill to allow development of a “mini-nuke.” Warner and Allard were responding directly to requests from the Air Force for a weapon to strike deeply buried, hardened targets – bunkers containing either chemical, biological or nuclear weapons or leaders of so-called rogue states.

The new nuclear weapons being sought are described as “mini”; nevertheless, they would still be vastly destructive, leaving a swath of radioactive devastation wherever they were used. In current US law, any nuclear weapon with an explosive yield of 5 kiloton or less is said to be a “mini-nuke.”

Development of such weapons is currently prohibited in the US. Many “mini” warhead designs already exist, however, and designs for their weaponization have been drawn up by the labs. Following excellent work by former Representative Elisabeth Furse (Democrat-Washington) in 1993 and by Representative John Spratt (Democrat-South Carolina) in 1994, actually moving into the research, development, testing, and evaluation process for a new weapon is not allowed. These are the provisions that Senators Warner and Allard sought to overturn.

The weapons currently sought by the US Air Force are thought to have an explosive yield of 1 kiloton or even a little less. They would be intended to burrow up to 30 meters underground before detonation. This would allow destruction of hardened bunkers or would glassify chemical or biological agents in situ, supposedly without venting residue, radiation, heat, or blast into the environment. The weapons will therefore be said to be “usable,” because they will kill only a few thousand to a few tens of thousands, not millions, incinerating only city districts, not entire urban areas.

Doctrinal changes introduced by the US and NATO during the 1990s would allow for the use of such weapons. These changes would allow for the use of nuclear weapons against chemical or biological weapons, even pre-emptive use if an attack was thought likely. These changes are enshrined in the US Presidential Decision Directive 60 issued by President Clinton in 1997, and the NATO Military Committee Paper MC-48/2 agreed secretly in May 2000, which details how to
implement the new NATO Strategic Concept, agreed at the Washington Summit in April 1999.\textsuperscript{25} Already the US has deployed the B61-11 to some of its nuclear certified Air Force units. This bomb is a bunker buster but is considerably larger than the “mini-nukes” now under discussion.

The Warner-Allard provisions were substantially watered down in a budget battle in September, 2000. A request to appropriate $6 million for lab work on “mini-nukes” was rejected. The report mandated by Congress on capabilities for destruction of deeply buried hardened targets was required to focus on conventional and nuclear means, instead of nuclear alone. Moreover, the report must be completed by July 1, 2001, at which date all work on “mini-nukes” must cease. The Warner-Allard version would have left this open-ended.

Still, this victory is only a holding action. Warner and Allard will come back to Congress asking for more in 2001. With Republicans controlling the White House and both houses of Congress for the first time in 50 years, the struggle to contain “mini-nukes,” as with many other military projects, will be harder than ever.

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National Missile Defense: The Terms of the Debate

Those of us working for the reduction and elimination of nuclear and other weapons of mass destruction achieved a clear victory this fall, with US President Bill Clinton’s move to delay a decision on initial deployment of a National Missile Defense (NMD) system.

Nevertheless, the nuclear debate is not being conducted on our terms, and the driving force continues to be the United States and its NMD desires. The bulk of the opposition to NMD has been based on technical grounds, which are good for spoiling tactics but provide no foundation for either making the issue go away or turning the debate in our favor. As a senior State Department official wryly asked a delegation from the US Coalition to Reduce Nuclear Dangers last year, “So, if it’s cheap and it works, you have no objection in principle?”

Of course, the objections of US allies and other nations also are factors in the NMD debate in Washington – but relying on the Russians to hold the line on the embattled Anti-Ballistic Missile Treaty is a triumph of hope over experience. Moscow most often has been rolled by US arms control negotiators and is now in a very weak position. It is nevertheless essential to stress that the effect of NMD on China and Russia already has begun a new arms race. NMD is no defense – it merely restarts the action/reaction cycle.

In the United Kingdom, another weak argument is used by missile defense opponents – “We don’t want to be a target.” This is weak because A) President Bush will offer to protect Britain, and B) it does not display the proper Blitz spirit.

The cost argument, however, can and should be used in Britain. William Hague, Conservative Party leader, has left a hostage to fortune by offering unconditional support for NMD – including, presumably, cash. We should set the press on the case of whether he supports buying American missiles and adding 5 pence to income tax to pay for it.

Even so, some British and American politicians find themselves at a loss when asked by missile defense supporters – “Don’t you want to be defended?”

The answer is “Of course we want to be defended, that is why WE want to eliminate the threat, not sit around waiting to shoot it down. NMD advocates have no plan to eliminate the threat. They mostly deride the idea of elimination as unrealistic. Their defeatist attitude is most un-American. We need a can-do attitude to threat elimination.”

This slogan/soundbite is intended to recapture the political/psychological ground given up by the anti-nuclear movement when Reagan launched Star Wars, and which has never been recaptured. The domestic political requirement for Star Wars in 1983 was to counter-attack the peace movement’s success in making people fear that the “Balance of Terror” was too risky. Reagan agreed and went further than almost everyone in the peace movement by attacking nuclear deterrence and mutually assured destruction (MAD) as “Russian Roulette.” He offered Star Wars as a technical solution to answer the threat of annihilation. The anti-nuclear groups – dominated by arms control groups who endorsed/accepted MAD – replied, “Don’t mess with deterrence and the ABM Treaty.”

26 This paper was presented at a Consultation on National Missile Defense, Vancouver, Canada, February 15-18, 2001.
The US movement in the early 1980s had been about freezing the number of nuclear weapons at their present level; the incrementalism of the time was forced by the Cold War mentality.

To this day, the debate in the United States has been characterized in this way. As Star Wars developed new rationales, opponents continued to get rolled because they had no strategic political response.

We need to back up the key message I have laid out above with repetition and politically useful tools. These include:

- The argument made by former Reagan administration official Paul H. Nitze for complete unilateral nuclear disarmament.
- The new NATO arms control report and Nuclear Planning Group communiqué, which include a commitment to work to implement the agreements made at the 2000 Review Conference of the NPT. Any NATO policy must – in Washington terms – already be US policy. In this case, the NATO endorsement of the NPT was signed by outgoing US Secretary of Defense Bill Cohen, a Republican. This is unique, and a significant success for the long-standing dialogue through which the Non-Aligned Movement and the NAG [New Agenda Group] used the NPT process to pressure European NATO nations into adopting improved positions inside NATO. BASIC and other NGOs then followed by using the NATO position to influence the United States. As a Senate staff member remarked the other day – “any NATO position has to be our position.”

Over the last six years, the debate on nuclear weapons has been frozen – with a weak and defensive Russia, a US president who could care less, and a Republican Senate that enforced no action being taken.

This has changed. New President George W. Bush and his team are considering a combination of some form of de-alerting, unilateral cuts, and force modernization alongside expanded NMD. They are fully prepared to break the logjam and define the debate on their terms.

They will, however, take some months to get this together. At the same time, the pro-disarmament and arms control Democrats are now free to criticize, whereas before they would not attack an already weakened Democratic president.

The NGO community in Washington needs to work together to refocus the debate.

And a strategy based on touting the need for elimination of nuclear weapons gives the Democratic opposition a tool to use in the upcoming US debates, when otherwise they would be gnashing their teeth in frustration while watching Republicans such as Senator Jesse Helms, chairman of the Foreign Relations Committee, endorsing de-alerting, unilateral cuts, and the rest.

This strategy links, rather than separates, internal Washington political work with the global anti-nuclear constituency.

If successful, it also moves the debate towards cooperative threat elimination.

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On September 1, 2000, the Clinton Administration opted to defer any decision on whether to deploy a national missile defense (NMD) intended to protect the United States from attacks by nuclear-tipped missiles. The new Bush administration, which assembled a pro-missile defense national security team, however, is likely to deploy missile defenses, even larger than Clinton’s version. Before taking irrevocable steps down this path, the United States should stop and consider that deploying missile defenses could have grave consequences for US-China relations, and the future of nuclear arms control.

China will regard NMD deployment as a hostile act meant to neutralize its nuclear weapons. To China, US claims that missile defenses are intended to defend US territory from missile attacks by “states of concern” and unauthorized or accidental missile launches from Russia and China do not bear scrutiny. None of the alleged “states of concern” has actually initiated deployment of ballistic missiles capable of reaching the US in the foreseeable future. Nor would the planned system guard against thousands of Russian warheads. The US NMD system under development, however, technically flawed, could in principle neutralize China’s strategic nuclear deterrent. China currently has about 20 single-warhead intercontinental ballistic missiles (ICBMs) capable of reaching the United States. Even the limited initial deployment of 100 interceptors designed for 4-to-1 engagements could intercept China’s entire current arsenal.

China worries that the possible military superiority NMD could offer may allow the United States to feel it has more freedom to intervene in China’s affairs and encroach on its sovereignty, including undermining China’s efforts at reunification with Taiwan. This concern is exacerbated by US cooperative research and development of advanced Theater Missile Defense (TMD) with Japan and potentially Taiwan – the 1997 amended US-Japan Defense Cooperation Guidelines refer explicitly to “Cooperation in Situations in Areas Surrounding Japan,” which could include Taiwan. Furthermore, in view of the recent noisy anti-China clamor raised by some politicians, including bombing China’s embassy at Belgrade and the recent spy plane incident, it may be natural for China to have some worries over this program. Given Chinese concerns, if the United States goes ahead and deploys even a limited system of national missile defenses, China is likely to react in ways that will hurt US-Chinese relations and harm US interests.

To retain its nuclear deterrent, China’s direct response to the US NMD could be to speed up and enhance its nuclear arsenal modernization. For instance, China's relatively slow and modest pursuit of less vulnerable mobile and solid-fueled missiles may become more urgent. China’s military planners may make a worst-case assumption of 100% effectiveness for US missile interceptors and prepare to face the fully deployed NMD system, which may have 250 interceptors. Thus, the number of ICBMs China fields might possibly be expanded tenfold or more. Moreover, all these missiles would be deployed with decoys and other countermeasures. Given its rate of economic and technological development, China can afford the possible costs of several billion dollars and overcome any technical obstacles over the next decade or so.

Given Chinese concerns, if the United States goes ahead and deploys even a limited system of national missile defenses, China is likely to react in ways that will hurt US-Chinese relations and harm US interests.
Further, China could reconsider its participation in multilateral nuclear arms control treaties. Most important, perhaps, US NMD plans have already impacted negotiations on a global Fissile Material Cut-off Treaty (FMCT), which has been stuck at the UN Conference on Disarmament in Geneva since 1993. An FMCT, which would ban the production of nuclear materials for weapons, has long been seen as a key building block in nuclear disarmament and nonproliferation. The 2000 NPT Review Conference called for the CD to commence negotiations immediately on an FMCT, with a view to its conclusion within five years. China’s participation in an FMCT, however, will be critical to its success, however. Without China’s participation in the FMCT, India will not sign it, and Pakistan will not sign unless India does. Both South Asian countries and Israel are believed to be continuing to produce fissile materials for their stockpiles.

Like the other four NPT nuclear weapon states, China is believed to have stopped producing highly enriched uranium and plutonium for weapons, and China has consistently supported the FMCT negotiations. Because of its concerns about US missile defense plans, however, China has recently made clear it is not willing to start FMCT talks without also starting talks on agreements to prevent an arms race in outer space – which would include limiting US missile defenses. For China, the issues of NMD and an FMCT are inextricably linked, because China could not afford to end the production of both highly enriched uranium and plutonium for weapons if it needed this fissile material to expand its nuclear arsenal in response to US deployment of missile defenses.

China also worries that US deployment of missile defenses over Russia’s objections—which have been strenuous and persistent—could scuttle the US-Soviet ABM treaty, which limits missile defenses. Russia has announced that continued US compliance with the ABM Treaty is a condition for Russia’s implementation of the START I and START II nuclear-arms-reduction treaties. An end to the START process and possible resumption of arms racing could lead to a new and very serious threat to China’s small nuclear arsenal, giving China another reason to rethink its position on the FMCT.

Moreover, a redoubled Chinese nuclear modernization effort could raise calls in China for carrying out additional nuclear tests to perfect modernized weapon designs. While such tests are barred by the Comprehensive Test Ban Treaty – another key element of the global regime limiting the spread of nuclear weapons – that treaty has never entered into force, the United States has refused to ratify it, and the United States would be withdrawing from or violating the ABM Treaty to build an NMD. In that situation, China might feel well within its rights to carry out prohibited tests in response. At the same time, with the United States carrying out an action that threatened China, China might well decide to stop cooperation with the United States in other security areas – such as constraining its nuclear and missile exports, helping to convince North Korea to rein in its arms programs, and working to resolve nuclear issues in South Asia.

Eventually, failure to proceed with the nuclear disarmament process to which the nuclear weapon states are already committed under the nuclear Non-Proliferation Treaty would inescapably damage global efforts to prevent the spread of nuclear weapons. Thus the effect of US deployment of NMD would be a major breakdown of nuclear arms control. This would clearly not benefit any country’s security interests, including those of the United States. Should the United States run the risks posed by China’s potential responses to US deployment of NMD? The choice is for the new administration to make.

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Supporters of a “Star Wars” National Missile Defense (NMD) system often frame their argument in appealing terms, stating that missile defense would offer us freedom from the threat of a nuclear missile attack. Proponents paint missile defense as an antidote to the immoral, outmoded Cold War doctrine of Mutual Assured Destruction or MAD, which holds that nuclear-armed adversaries will be deterred from launching a nuclear strike by the threat of certain retaliation and annihilation.

For example, conservative Christian political activist Chuck Colson, whose daily BreakPoint commentary is carried by more than 1,000 radio stations around the country, opined on January 19 that deploying a national missile defense “…can restore sanity to our national security policies and deliver us from the moral insanity imposed by a forty-year relic of the Cold War, Mutual Assured Destruction (MAD).” On the moral insanity of continuing to base our security on the threat to incinerate millions of people, politely called “nuclear deterrence,” Colson was silent.

If we raise morality in the context of nuclear weapons, as we must, then we are “in for a dime, in for a dollar,” and have to realize that no religious, moral, or ethical code can justify the use, threat to use, or even existence of nuclear weapons. Far from posing a more moral policy, missile defense advocates shrink from moral leadership by accepting the continued existence of these horrific weapons that could end life on Earth as we know it.

It is unfair and inaccurate to allege that opponents of Star Wars seek to maintain MAD, or what has more appropriately been called the nuclear balance of terror. Advocates of the only real solution to the nuclear threat — the total, verifiable, enduring elimination of nuclear weapons from the face of the Earth — are not defenders of MAD. We oppose Star Wars because, while supporters say it will make us more secure, it in fact will do the opposite by starting a new nuclear arms race with Russia and China, which will then likely spread to India and Pakistan.

There are the other important reasons to oppose Star Wars. Independent scientists, including 50 Noble Prize laureates, say it won’t work. Star Wars will rob tens or more likely hundreds of billions of taxpayer dollars from education, health care, and the environment. The alleged threats NMD is supposed to counter, an attack by a “rogue” state or an accidental missile launch by Russia, are overstated. None of the “states of concern” as they are now called, North Korea, Iran, or Iraq, has ever flight tested a missile capable of hitting the United States with a nuclear warhead, and while US relations with Iraq remain adversarial, remarkable steps toward rapprochement with Iran and, particularly, with North Korea have occurred in the past few years. The threat of an accidental launch by Russia, while real and a cause for serious concern, is better addressed by working with Russia to improve its security, command, and control over its nuclear arsenal, and by striving to eliminate nuclear weapons altogether.

Add it all up and it looks like the real role of Star Wars is not to defend the United States, but rather to defend the interests of the weapons contractors who pumped over $13 million in campaign cash into election campaigns over the past two years to make sure Star Wars and other exorbitant Cold War dinosaurs get funded by your tax dollars and mine. Dr. Nira Schwartz, a former TRW senior engineer who blew the whistle on the contractor’s fraudulent reporting of Star Wars radar test results, said it best: “It’s not a defense of the United States. It’s a conspiracy to allow them to milk the government. They are creating for themselves a job for life.” Dr. Schwarz is suing TRW and

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27 This article originally appeared as a commentary on public radio station WVPE, Elkhart, Indiana, during the week of February 19, 2001.
lead Star Wars contractor Boeing for violation of the False Claims Act and wrongful employment retaliation. Boeing recently had its contract renewed by the Pentagon for $6 billion. With options, the amount could balloon to $13.7 billion by 2007.

Predictably, supporters of missile defense scoff at the notion of abolishing nuclear weapons worldwide. “You can’t put the genie back in the bottle,” they say. The knowledge of how to build nuclear arms is widely available and can never be wiped from the collective human memory, so we are doomed to live with nuclear weapons forever.

Eliminating nuclear weapons worldwide, while not a simple matter, is much more realistic, and would make the US and the world more secure than an illusory and ultimately fruitless pursuit of security through the provocative, unproven, so far failed technology of missile defense. Cheaper, too, by far. The land-, sea-, and space-based version of Star Wars favored by the Bush Administration would likely cost at least $100 billion, maybe several times that, on top of the $60 billion we’ve spent on missile defense schemes since Ronald Reagan proposed Star Wars in 1983, with absolutely nothing to show for it. That’s your tax dollars and mine that could be better used for education, health care, affordable housing and the environment.

Nobody believes nuclear weapons can be eliminated tomorrow. But serious, thoughtful people including former heads of state like Jimmy Carter and Mikhail Gorbachev and former admirals and generals who had their fingers on nuclear triggers, have come out for the global abolition of nuclear weapons. High-level commissions have outlined the necessary steps toward total nuclear disarmament, including measures for verification and control of nuclear materials. A draft model treaty on eliminating nuclear weapons, similar to the treaty that outlawed chemical weapons, has been circulated for discussion at the United Nations. Abolishing nuclear weapons would be a process; nations would negotiate the steps, work together to verify progress, agree on how to deal with potential violators. Confidence would be built along the way; we’d be building the path by walking it.

There’s no such thing as a risk-free world, especially because the nuclear genie is out of the bottle. So there are two choices: work to eliminate nuclear weapons worldwide, understanding the risks and benefits involved, or pursue security through missile defense, with our eyes wide open that it will spur nuclear proliferation and a new arms race. It seems to me there’s only one moral option here.

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Amputating Realism

In May of 2000, 187 governments agreed that “the total elimination of all nuclear arsenals” is the goal. After 55 years of blah blah about “eventually” and “ultimately” getting rid of nuclear weapons we finally got an “unequivocal undertaking by the nuclear weapon states to accomplish the total elimination of their nuclear arsenals leading to nuclear disarmament.” Hooray.

Getting rid of the 35,000 nuclear weapons will be a lot of work, but we have certainly taken the first steps. Getting rid of the Realists was one very important step in the right direction. What a pest they were!

Perhaps we will one day be ashamed of how much we teased the Realists or perhaps one day we will get nostalgic about their fuddy-duddy silly confusing ways. Perhaps we will think of them as little diplomatic-NGO-UN secretariat hobbits, remembering fondly how we called them the Closeted Disarmers, or the Ones Who Probably Need Therapy For Their Cynical Depression.

Perhaps when the Realists are fully relegated to history, we will see patterns in their bizarre intellectual olympics that sought to qualify disarmament into the ground, to perpetually postpone the decision. They tried to convince and appease the hyper-militarists (also usually needing a fair whack of therapy themselves) by pretending that disarmament didn’t imply some kind of agreement, or set of agreements, on paper.

Instead the self-proclaimed Realists and their cohorts used the R word as a kind of shorthand in this pretending game. Perhaps in the hope of being invited to conferences or to tea, or perhaps because they thought they were being clever to distance themselves from the loony dangerous people who wanted governments to do what they promised within a 30 year time frame, the Realists would say, “Oh, its too soon to start talking about a Nuclear Weapons Convention, even though we said in 1970 that we would disarm. It’s just not realistic yet.” Oh how sweet and naive of them to pretend that the weapons would just disappear and pieces of paper wouldn’t be necessary!

It was hard for the Realists to face the fact that getting rid of the category of nuclear weapons will require first a decision, an undertaking. But they did. It wasn't realistic to think that the NPT would actually succeed. But it did. It wasn’t realistic to think that a group of countries would stand up and decide to challenge the big nuclear weapons powers, but seven countries have, and they have catalysed change, a bit of evolution. And while it may not be “realistic” to predict the precise details of evolution, it is inevitable, and its direction is usually pretty clear.

Because the obvious is so obvious, especially after a 55 year conversation, the Realists issued a statement after the NPT under the heading “Sorry For Wasting So Much Of Your Precious Time.” It read:

The axis upon which the new political undertaking for total nuclear disarmament turns is an abandonment, an amputation of a politically defeatist and unimaginative code of thought from the disarmament discourse, a politically motivated form of realism, which we have generated from a false notion of useful compromise.
We hereby declare our intention to Get Real and drop this self-important procrastinating blah blah that for too long amputated the disarmament goal from the means of achieving it. In order to get rid of those nuclear weapons that symbolise the Cold War’s suicidal tendencies, genocidal intentions, and ecodical possibilities, a Nuclear Weapons Convention, a set of agreements, a framework of agreements is just as “realistic” and possible as a nuclear war. It would seem more sensible, and we admit it, realistic, to begin working towards the Convention rather than the war.

In conclusion, we now realise there is nothing unrealistic about describing and discussing and scoping out the logical routes to a new non-nuclear reality, walking directly down the route of transgression, towards the solution. Again, sorry for wasting so much of your precious time.

And history will record that we teased them one last time for being such a pack of hopeless losers, then we forgave them and began the business of taking apart the nuclear weapons.

Felicity Hill  
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Women’s International League for Peace and Freedom  
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Moving Beyond Missile Defense

It is widely assumed that the plans of the US government to deploy a National Missile Defense (NMD) against ballistic missiles from so-called “rogues states” pose considerable technical problems and have far-reaching implications for international security and stability. Reactions and countermeasures from other countries, in particular from Russia and China, may undermine the efficiency of such a system, but may also contribute to an arms race between offensive and defensive missiles, with unforeseeable costs and risks. A technically questionable and expensive missile defense system is unable to reduce proliferation dangers but would rather increase them. Thus, NMD and its regional Theater Missile Defense (TMD) counterparts affect many countries.

As opposed to the US government’s attempt to make everyone believe that neither missile proliferation nor missile defense (nor the space threat) can be stopped, it is important to emphasize that in view of the technical difficulties of both missile development and missile defense there is time for political debate and alternative solutions. The problems of missile proliferation must be viewed in the wider context of regional and global security. If global missile threats beyond those of the nuclear weapon states could be prevented by political means, missile defenses would become obsolete. While the international community discusses the role and implications of missile defense, the political alternatives are largely neglected.

The project “Moving Beyond Missile Defense” of the International Network of Engineers and Scientists Against Proliferation (INESAP), in collaboration with the Nuclear Age Peace Foundation (NAPF), assesses the problems posed by missile proliferation and missile defense, and explores options to resolve these problems. The project is to serve as a nucleus for an international initiative and a movement that prevents a missile race and promotes alternatives that show ways out of the arms race. The following issues are on the agenda:

1. What is the status of the current and potential future missile threat in different regions? How efficient have previous control efforts been, such as START and the Missile Technology Control Regime?

2. Is missile defense a realistic instrument to prevent the missile threat, given the possibility of countermeasures? What are the feasibility, effectiveness and costs of missile defense, and the implications with regard to international security and stability, disarmament and arms control (ABM Treaty, Deep Cuts)?

3. Which instruments (political, legal, technical, economic) are possible to reduce a missile threat and prevent a missile race on earth and in space? And how are they evaluated with regard to efficiency, costs, and risks compared to missile defense? How can the international control of ballistic missiles, missile defenses, and space weapons be strengthened?

A critical analysis of missiles and missile defense is a precondition for the development of alternatives and the strengthening of international cooperation in this field. Scientific-technical expertise is essential, in particular with regard to the analysis of current and future missile capabilities, the technical feasibility of missile defense, and the outline of science-based concepts, for instance with regard to the design of verification systems. In addition to scientific expertise for the analysis of the problem and its resolution, a mechanism is required that introduces the results into the political debate.

Therefore the project pursues a dual strategy of concept development and its promotion:
1. An international Study Group of experts is to be formed to evaluate the problem and develop alternative concepts. The main issues are to be explored by subgroups which exchange and discuss their results among each other, both at and between meetings. Results and recommendations will be made available by way of reports that are widely distributed.

2. The thematic work is to be closely integrated into a policy-oriented process. In order to strengthen the science-policy interface and to broaden the basis of support for the project, political decision makers, diplomats, the media, and NGOs should be involved in the activities of concept development and its presentation in selected regions. The project supports diplomatic initiatives directed at improving international control and cooperation in this field.

The project will raise public awareness and understanding of the problems, so that individuals and groups will be able to voice their concerns about the dangers of a missile race and lobby for alternatives. The activities range from small informal briefings for politicians and media to workshops and conferences that attract wider attention. The project is intended to function as a catalyst for strengthening cooperation and building ties among those who are willing to cooperate, both on the governmental and non-governmental levels. In addition to striving for direct contact, results will be distributed in the print media and on the Internet, in particular in the INESAP Information Bulletin, briefing books, and papers. Some scientific results will be explored in greater depth in technical reports and conference proceedings.

With this international endeavor, INESAP hopes to introduce science-based proposals into the national and international debate and the political decision making process on missile defense and to promote feasible and adequate responses to the missile threat that do not undermine international stability but enhance international cooperation.

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First draft concept paper for the project "Moving Beyond Missile Defenses" of the International Network of Engineers and Scientists Against Proliferation and the Nuclear Age Peace Foundation, March 6, 2001.
Uppsala Declaration on Nuclear-Weapon-Free Zones

A decade after the end of the Cold War, the world faces a stark choice: achieve the complete abolition of nuclear weapons, or face a second Nuclear Age with new generations of even more horrifying nuclear and other high-tech weapons.

We believe there is an urgent moral, political, legal, and security imperative to abolish these weapons, and build a strong momentum towards complete global nuclear disarmament. This is a precondition for human and environmental security.

Therefore, more than 50 scholars, peace activists, diplomats, and experts from six continents met on September 1-4, 2000, at Uppsala in Sweden. The conference, convened by the Dag Hammarskjöld Foundation, the Transnational Institute, Peace Depot, Gensuikin (Japan Congress Against A- & H-Bombs), and INESAP (International Network of Engineers & Scientists Against Proliferation), discussed the feasibility of establishing Nuclear-Weapon-Free Zones (NWFZs) across the world.

The dramatic threat of a new Nuclear Age highlights the urgent need for comprehensive nuclear disarmament and rapid destruction of the arsenals of all nuclear weapon states. It also calls for incremental measures towards these goals. These include a nuclear test ban, a missile flight test ban, separation of warheads from missiles, a ban on the production of fissile materials used for making nuclear weapons and appropriate disposal or safeguarding of the accumulated stockpiles of such material.

Crucial among these transitional measures are Nuclear-Weapon-Free Zones. These would ban the manufacture, deployment, and transit of nuclear weapons in specific regions, and demand of nuclear armed states that the zones not be threatened or attacked with nuclear weapons. This would help make it possible to permanently fold the nuclear umbrella, the so-called nuclear protection that nuclear weapon states offer non-nuclear allies.

Such zones already exist in Latin America, the South Pacific, Africa, and Southeast Asia. They have prevented nuclear proliferation in those areas. A new zone is currently being negotiated in Central Asia. Several regions continue to face severe nuclear dangers, a challenge exacerbated by menacing attempts to build both National and Theatre Missile Defence systems. These regions include Northeast Asia, South Asia, the Middle East, and Central Europe. The creation of NWFZs here would not only limit proliferation but support active nuclear disarmament with the dismantling of overt and clandestine nuclear weapons and fissile stocks and rolling back existing nuclear programmes. Such extension of NWFZs to the Northern hemisphere will enhance collective security and strengthen efforts to completely eliminate nuclear weapons.

An NWFZ treaty in Northeast Asia would effectively address security concerns in Japan and the Korean peninsula. A South Asian NWFZ would prevent India and Pakistan from making or deploying nuclear weapons in this volatile region, where the danger of a nuclear exchange is today the greatest anywhere in the world. In the Middle East, the establishment of a zone free of Israel’s nuclear weapons, and all other weapons of mass destruction in the region, represents a key component of regional security. In Central and Eastern Europe an NWFZ would defend the post-Cold War peace gains now threatened by NATO expansion as well as facilitate withdrawal of remaining tactical nuclear weapons.

There are no technological obstacles to effective verification of NWFZ agreements. Establishing such zones requires political will, organisation, and mobilisation. We hereby commit ourselves to:
• Creating a Nuclear Weapon-Free Zone Network to coordinate efforts in support of new and existing zones, including actively advocating the creation of NWFZs in Central Asia, Northeast Asia, South Asia, the Middle East, and Central Europe.
• Public education on the horrors of nuclear weapons, the urgency of nuclear disarmament, and the value of NWFZs.
• Supporting the Latin American proposal to the United Nations General Assembly for an international conference of all parties to the Nuclear Weapon-Free Zones.
• Strengthening the existing zones and demanding strict adherence to the treaty provisions by the nuclear weapon states.
• Engaging policy-makers and parliamentarians worldwide in support of NWFZs.
• Supporting single-country nuclear-weapon-free zones.
• Supporting nuclear-free cities, provinces, and other areas governed by local authorities.
• Opposing Theatre and National Missile Defence systems as an integral part of our opposition to nuclear weapons.
• Working to defend nuclear whistle-blowers, such as Mordechai Vanunu, now entering his 15th year of imprisonment for having revealed Israel’s nuclear arsenal; we demand his immediate release.

Peoples and governments everywhere, as well as the United Nations, have a contribution to make to the creation and expansion of nuclear-weapon-free zones. We urge others to join us in mobilising energies and resources towards achieving the noble goal of global nuclear disarmament.

_Prepared and released at an international seminar “Nuclear-Weapon-Free-Zones: Crucial steps towards a nuclear-free world,” 1-4 September, 2000, Uppsala, Sweden._
**All-India National Convention for Nuclear Disarmament and Peace Interim Charter**

This National Convention for Nuclear Disarmament and Peace resolutely opposes nuclear weapons in India, South Asia and globally. Nuclear weapons are evil and immoral. They divert resources from real needs, promote insecurity, are genocidal, undermine democracy, endanger the environment and future generations. This Convention unequivocally condemns India’s entry into the Nuclear Weapons Club in 1998, which represents a betrayal of its own past positions. This Convention resolves to bring together large numbers of groups, organizations and individuals on a common platform with the following Agenda. To carry forward this Agenda we constitute ourselves into a National Coalition for Nuclear Disarmament and Peace.

**India:**

To halt and roll back India's nuclear weapons-related preparations and activity we demand the following measures to be implemented immediately:

- No assembly of nuclear weapons, no induction and deployment of nuclear weapons. No acquisition and development of nuclear weapon-specific delivery systems.
- Advanced research into nuclear weapons to be halted. No to explosive testing, sub-critical tests, or production or acquisition of weapons usable fissile material tritium.
- Complete transparency and independent monitoring of governmental activity in this regard and full public accountability on nuclear development and energy matters.
- Proper compensation and reparation to all victims and their families for damages to health and local environment by activities related to all aspects (from uranium mining to reactor operation to waste disposal) of the nuclear fuel cycle. Priority must be given to remedial measures for all environmental damage.

**Other Nuclear Capable and Nuclear Weapons States:**

- We demand similar immediate measures of nuclear restraint and roll back from Pakistan. Given the tensions and potential for war in West Asia, we demand complete dismantling of Israel's nuclear weapons regime.
- All the N-5 or Nuclear Weapons States (USA, Russia, Britain, France and China,) must immediately de-alert their nuclear weapons systems, make a pledge of No First Use and stop all research into advanced nuclear weapons. No to all efforts to construct an anti-ballistic missile system or missile shield.
- We demand the rapid, systematic, and continuous reduction by the N-5 of their nuclear weapons down to zero level through unilateral, bilateral, and multilateral commitments and pacts.
- We demand that the Indian Government go back to being among the pacesetters in matters of global nuclear disarmament.

We want a nuclear weapons free world and we support all genuine efforts in pursuit of this goal. In this effort we commit ourselves to the global nuclear disarmament movement and will strive to strengthen international solidarity in this endeavour.

Released at the National Convention for Nuclear Disarmament and Peace November 11-13, 2000, New Delhi, India
Section 3.
Science and Verification

Introduction

The decision to disarm is implemented by, among others, the scientific community, including academic institutions and industry. Their role in the pursuit of a nuclear weapon free world is to develop and apply the science of nuclear disarmament. They also shape the disarmament decision itself – its good faith application is undercut, for example, by technology-driven policies that seek to maintain nuclear weapons. In a similar way, the drive for a “technical fix” – such as NMD or space weapons – to address security threats undermines disarmament efforts.

The contributions to this section discuss the role of science and scientists. Verification of a nuclear weapon free world is complicated and, although many of the elements exist or are known, there is much more work needed in this area. Exploration of these issues today, even before a framework for complete nuclear disarmament has been negotiated, can help to prepare for and bring about the day when such an agreement is reached.

Oliver Meier looks at the gaps that remain within the context of existing verification mechanisms, with a view to the requirements for a nuclear weapon free world. Two excerpts from Verification Yearbook 2000 supplement this analysis with an examination of the elements of comprehensive nuclear disarmament and an overview of societal verification, respectively.

Andrew Lichterman discusses the elements of a comprehensive missile control regime, as an alternative to missiles and missile defenses and an indication of the role the scientific community can play. An explicit expression of the choice not to pursue nuclear weapons or weapons of mass destruction is presented in the form of a pledge and a discussion of the rationale behind it.

This section also includes excerpts from a working paper submitted by the United Kingdom on verification of nuclear disarmament. This paper, together with a study by the British nuclear weapons facility Aldermaston, are welcome signs that at least one of the nuclear weapon states is exploring the scientific requirements of complete nuclear disarmament. Beyond the piecemeal, albeit important, work on particular verification technologies, such a “holistic” approach is crucial to building confidence in the verifiability of a nuclear weapon free world.
The Verification of a Nuclear Weapon Free World: Closing the Gaps

Verification is crucial to achieving the goal of a nuclear weapons-free world: only if states have a high degree of certainty that all members are complying with obligations under a nuclear weapons convention (NWC) will they enter such a far-reaching agreement. The Model NWC proposes an ideal-type verification system that combines and takes further the most progressive elements from relevant international treaties.

The broad scope of the NWC, which would ban development, testing, production, possession and use of nuclear weapons, nuclear weapons materials, nuclear weapons delivery vehicles, nuclear weapons components as well as nuclear weapons research activities, necessitates a verification system that takes advantage of the strengths of many existing and future nuclear arms control regimes. Fortunately, many of the areas covered by the Convention are already subject to verification. The Convention builds on existing verification regimes for the Comprehensive Nuclear Test Ban Treaty (CTBT), NPT safeguard agreements, US-Russian arms reduction treaties, and regional agreements (such as nuclear weapon free zones). The verification regime of a future treaty banning the production of fissile materials for nuclear weapons purposes will be another important building block in the verification of a nuclear weapon-free world. By participating in these regimes, many states are already acquiring verification-related experience, such as preparing declarations and accepting and organising on-site inspections. The experience collected in verification organisations will play an important role when an agency is established to implement an NWC.

Nuclear Warheads and Military Fissile Material: The Verification Gap

There is, however, one noticeable gap that will have to be closed if nuclear abolition is to happen in a verifiable manner: there are currently no verification arrangements in place for either nuclear warheads or military fissile materials (namely, holdings of highly enriched uranium and plutonium). While certain nuclear weapon related areas such as testing, delivery vehicles, and excess weapons materials are already subject to verification or transparency regimes, information related to warheads and warhead materials remains a tightly kept secret.

Under an NWC, all nuclear weapon states will have to declare the numbers and locations of their nuclear weapons. They will probably also be required to publish a historical account of their nuclear weapons programmes. Such a “baseline declaration” submitted by all states with a nuclear weapons programme will establish the basis from which nuclear reductions will be monitored. The NWC envisages this to happen through an iterative process of declarations by states parties as well as off-site and on-site monitoring activities, some of which can be highly intrusive.

Verification Is a Process of Learning

Agreeing on and setting up effective verification regimes is usually a long term process. This process often starts with confidence building and transparency measures which eventually evolve into more intrusive verification regimes. Especially in sensitive areas related to national security, prior experience with declaration and inspection procedures can facilitate the implementation of complex verification arrangements. For example, it took decades of political discussions and joint scientific experiments to reach an international agreement on the verification requirements for the CTBT. Likewise, the Confidence and Security Building Mechanism and the associated transparency measures negotiated under the Conference on Security and Cooperation in Europe (CSCE) umbrella were essential in preparing the ground for the verification regime of the treaty on Conventional
First Steps to Start a Confidence Building Process

Nuclear weapon states should enter a confidence building and transparency process relating to their nuclear warheads and military fissile material stockpiles now. Initiating plurilateral confidence and transparency measures at an early stage will facilitate agreement on a verification regime for an NWC at a later stage. Specifically, nuclear weapon states should acquire experience with making their nuclear weapons holdings more transparent, monitoring arrangements for their weapons and fissile material holdings, and on-site inspections.

Russia and the United States have acquired verification experience during the implementation of the Intermediate-Range Nuclear Forces (INF), Strategic Arms Limitation Talks (SALT), and Strategic Arms Reduction (START) treaties, which limit numbers and types of certain nuclear delivery vehicles and deployed nuclear warheads. Both countries have already agreed in principle on a number of additional measures that would constitute first steps in implementing transparency and confidence building measures. As part of the March 1997 Helsinki agreement, both governments have agreed that under a future START III treaty, the US and Russia would negotiate transparency measures relating to active, “reserve” and retired strategic nuclear warheads. These measures are intended to promote the irreversibility of deep reductions in warhead inventories. During the Helsinki summit, Presidents Clinton and Yeltsin also agreed for the first time to discuss tactical nuclear weapons in the context of START III, including related transparency and confidence building measures. Additionally, the Trilateral Initiative, which is under negotiation between Russia, the United States and the International Atomic Energy Agency (IAEA), would subject excess military fissile material to verification on a large scale.

China, France, and the United Kingdom have no experience with any form of verification related to their military nuclear programmes. Even more challenging will be the involvement of India, Israel, and Pakistan.

Next Steps in Confidence Building and Transparency

If and when a treaty banning the production of fissile material for weapons purposes is negotiated, all these states will become participants in multilateral verification related to at least the nuclear weapons material production complex. Since it will probably be years before such a treaty is negotiated and has entered into force, however, other ways to extend bilateral transparency and confidence building mechanisms related to nuclear weapons and fissile material holdings should be initiated now. Additional next steps in this direction might include:

- a nuclear weapons register, which could provide transparency with regard to weapons holdings,
- transparency measures regarding nuclear weapons storage sites,
- a fissile material register, containing information on military stocks of fissile material,
- publication of fissile material production histories similar to the ones that have been
published by the United States and the United Kingdom,

- plurilateral scientific consultations among states possessing nuclear weapons on the verification requirements of a nuclear weapon free world.

The early discussion and implementation of these and similar confidence building and transparency measures will provide a basis from which an agreement on a verification regime to monitor compliance with a nuclear weapons convention will be easier to reach. The norm of openness and transparency associated with such a regime will need to grow over time in order to achieve universal acceptance of a future NWC and its verification provisions.

**Oliver Meier**

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### Verifying Comprehensive Nuclear Disarmament

For comprehensive nuclear disarmament, a high probability of detecting *undeclared* warheads is...indispensable, so as to create assurance that no clandestine arsenals are being maintained. An important prerequisite would be much higher transparency regarding existing arsenals, such as a comprehensive overview of all existing warheads, including tactical nuclear weapons, which, to date, have not been subject to any arms control treaty. A 1993 proposal by then German Foreign Minister Klaus Kinkel for a nuclear weapons register at the United Nations should be revived....

The nuclear reductions that have been agreed and will be negotiated soon involve only the holders of the two largest arsenals, Russia and the United States. At least all of the declared NWS and additional unofficial nuclear weapon possessors must be involved in the final moves toward nuclear disarmament. The Treaty and its verification system must be multilateral, requiring a different organisation, decision making procedures and compliance mechanisms. A major exemplar of a multilateral verification organisation is the Vienna-based International Atomic Energy Agency (IAEA). Nevertheless, valuable technical lessons can also be drawn from the bilateral treaties.

The task of detecting undeclared warheads cannot be undertaken solely with technical means. These can be employed when concrete evidence exists of undeclared warheads: specially trained inspectors with the relevant equipment would be able to find and catalogue warheads at an identified location. But there is no guarantee that such evidence will ever manifest itself. The following elements would, however, be important in increasing the possibility of detection:

- the highest possible level of transparency regarding production histories, above all declarations and documentation, the publication of historic documents and the possibility of interviews with former employees;
- full exploitation of all relevant technologies, particularly aerial reconnaissance and environmental measurements, and the full range of NTM [National Technical Means], including intelligence gathering;
- freedom of the press and a democratic climate, which should generate a sense of obligation on the part of individuals involved in illegal nuclear weapons activity to “whistle-blow”;
- the possibility of enforcing a multilateral verification authority’s demand for clarification in the case of suspicion, through mandatory challenge inspections; and
- increased international trust, resulting from positive experiences of verification.
Taken individually, each of these factors is important for the verification of total nuclear disarmament. Together, they would improve verification to such an extent as to constitute “sufficient criteria” for effective verifiability. It would be unrealistic to expect the verification of comprehensive nuclear disarmament to be achieved in one step, but it is realistic to expect each successive step to build on past experience.

Total nuclear disarmament will only become possible after many intermediate steps have been taken. But each prepares the next, and will change both the security and security perceptions of the states involved, thereby influencing their subsequent decisions regarding further moves. In each phase, what is possible or impossible will be defined anew. The experience gained will also affect verification. An essential prerequisite for each new step is the enhancement of transparency and trust, and, as a result, trust in verification will also need to grow. It is wise, therefore, to design verification as if a nuclear weapon-free world is the objective, even though a decision as to whether it should become reality many be delayed.


**Societal Verification**

Societal verification may be applied to a wide variety of international agreements (and corresponding national regulations), including those pertaining to the environment, human rights, trade, labour, arms control and disarmament. But the requirements for, and problems of, societal verification in these areas are different. As a result, it is hard to develop a general model of societal verification and its implementation. To begin with, there are discrete actors to be monitored, including:

- commercial and non-commercial companies;
- government departments and agencies;
- various parts of the “military/industrial complex”;
- public and private laboratories;
- public and private research and development centres;
- police and security forces;
- national governments; and
- international organisations

There are also diverse aggregations of interest, influence and power to be handled. Consequently, the implementation of societal verification in disparate areas requires different types of coalition-building and separate forms of regulation and organisation. Varying degrees of transparency and assorted types of whistleblower protection are also necessary....
Challenges facing societal verification

There is a widespread view that in non-democratic countries with little respect for individual human liberties and rights, citizens’ reporting and whistle-blowing are likely to be ineffective. Yet, reporting by civil rights groups and other non-governmental organisations (like Amnesty International, Human Rights Watch and the Bellona Foundation) has for many years played an important role in strengthening compliance with international agreements even in non-democratic states, especially in the areas of human rights and the environment. Amnesty International’s reports are an important resource for anyone monitoring state behaviour with respect to human rights. Even in a non-democratic system, a government cannot be absolutely sure that persons with knowledge of clandestine activities will not transmit the information to the international community.

Future possibilities

To make social verification more likely, the following steps would be helpful:

• the legal right of all citizens and citizen groups to engage in societal verification needs to be guaranteed by each international agreement and by the legal system of each state part;
• explicit legal protection against discrimination and criminal prosecution should be established for all (natural and legal) persons reporting violations or attempted violations of an international agreement;
• the right to raise funds for citizens’ verification purposes, within and outside the country, must be guaranteed so that citizen groups obtain financial resources for their work; and
• regulations concerning freedom of information and openness in science should be promulgated.

Freedom of information means that records in the possession of public agencies and departments of the executive branch are accessible to citizens. Those seeking information should no longer be required to prove that they are entitled to obtain the data and have a special need for it. Instead, the “need to know” standard must be replaced by a “right to know” doctrine. The government or head of the relevant public agency must be required to justify the legally protected need for secrecy (for instance, properly classified documents, internal personal rules and practices, confidential business data, internal government communications, personal privacy and law enforcement). But it should be established, by law, that international and domestic legislation must not protect illegal “state secrets.” Information on violations of international or domestic law by state officials cannot be kept confidential.

A Comprehensive Missile Control Regime: It’s Not too Soon

Today, with the US ballistic missile defense program threatening to erode existing nuclear arms control mechanisms, regional confrontations in which ballistic missiles play a central role in the Middle East, South Asia, and Northeast Asia, and the possibility of an arms race in space looming large, the concept of a comprehensive missile control regime is well worth revisiting. A truly comprehensive missile control regime, going beyond horizontal nonproliferation measures such as the Missile Technology Control Regime and placing real limits on states with sophisticated existing missile programs, could provide a means to stem arms races that threaten to both accelerate and grow more interrelated and complex.

The technical issues involved in achieving a missile control regime or the elimination of long range missiles have been the subject of a number of useful proposals in recent years. The concept of a comprehensive missile control regime may be worth renewed attention by those whose primary focus is the control and elimination of nuclear arsenals, an area where the available avenues for progress appear to be blocked.

One possible first substantive restraint in such a regime, a comprehensive flight test ban, could help stem a wide range of high-tech arms racing, from both national and theater ballistic missile defense efforts to new generations of precision air and sea launched stand-off missiles. In the United States, which continues to outspend all conceivable adversaries on missile development as well as on missile defenses, both types of program are justified to the public principally as “counterproliferation” weapons aimed at deterring weapons of mass destruction and ballistic missile delivery systems. Such an arms control regime would stop ongoing missile programs in the countries the US deems a threat. Therefore the rationale offered for the development of both ballistic missile defense and the wide range of other expensive, destabilizing “counterproliferation” weapons either under development or on the wish list of the powerful military aerospace interests now ascendant in the United States – e.g., stealthier cruise and other long range stand-off missiles with greater hard target kill capabilities, and, further down the line, precision conventional weapons delivered through or from space – is undercut.

A broad missile flight test ban would also directly impede development of both ballistic missile defenses and a variety of long-range, precision hard-target capable conventional weapons – both of which also threaten to have a destabilizing effect on the still-deadlocked stand-off among the nuclear weapon states.

Proposals for missile control encompassing the phased elimination of the missile arsenals of the nuclear weapon states generally have received little official attention.

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28 This article draws on a collaborative paper in progress on missile control regimes with Zia Mian, M.V. Ramana, and Jurgen Scheffran. All errors, however, should be attributed to the author.

What seems to be required to control and eliminate long range missiles is a formal arrangement that will:

- recognize the problem of ballistic missiles and comparable delivery systems and express appropriate concern,
- commit to eliminate these weapons as soon as practicably possible,
- identify the fundamental political and scientific issues involved in meeting such a goal, and
- provide a mechanism to tackle these issues in a systematic step-by-step manner through a scheduled negotiating process.

One possibility is an approach similar to international conventions dealing with environmental problems such as the Vienna Convention on Protection of the Ozone Layer and the UN Framework Convention on Climate Change. These conventions set up a standing negotiating process, a Conference of Parties that is mandated to find means to meet the goals of the agreement.

As in these conventions, a missile framework agreement might set up a formal negotiating process for dealing with ballistic missiles, anti-missile systems, and analogous weapons systems, with a clear goal of eliminating them. The agreement would result in a series of phased steps towards the ultimate goal. As a reflection of the seriousness of the issue, countries could commit to a moratorium on the further development, testing and deployment of ballistic missiles and anti-missile systems at the outset. Such a measure would be like earlier nuclear test ban moratoria that created a conducive climate for negotiations.

The flight test ban and launch control regime elements of a moratorium on ballistic missile development could help prevent future arms races, and development of long range conventional weapons operating from or through space. Although not a substitute for a more comprehensive Outer Space Treaty that would unambiguously prohibit the deployment of weapons in space, a launch control regime that included inspections would help reveal efforts by any nation to place weapons in space. A ban on test flights of ballistic missiles could also have an immediate positive impact on the most volatile areas of emerging international arms competition, especially in South Asia, the Middle East, and Northeast Asia.  

A genuinely comprehensive missile control regime should also limit other means of delivery that can substitute for ballistic missiles, such as cruise missiles and other long range stand-off missiles. An immediate flight test ban that extends to such systems would limit the development of weapons found to be particularly threatening by many less technologically advanced states, since they are being used with increasing frequency and also appear to have lowered the “political threshold” to engaging in military action within some of the most powerful states.

It is important to recognize that the initial steps described here would leave the US, Russia, and several other states still able to project power globally through their long range bombers, their

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30 For an analysis of the applicability of such a regime to the case of South Asia, see Zia Mian and M.V. Ramana, “Beyond Lahore: From Transparency to Arms Control” in Economic and Political Weekly, April 1999, pp. 17-24.
aircraft carriers, and cruise-missile-armed naval vessels. A process placing restrictions from the beginning on ballistic missile development by all states might also require that such forces be withdrawn to their respective national territories and stood down, perhaps through a side agreement on de-alerting.

Verification

Verification of a comprehensive missile control regime faces more difficult political obstacles than technical ones. The technical verification problems certainly would not be insurmountable if wealthy states were willing to spend an appreciable fraction of the resources now spent on missile development, production, launch, guidance, and targeting infrastructure and related technologies on an international verification apparatus. The national technical means of several of states already are capable of detecting and closely monitoring ballistic missile launches. Tests of anti-ballistic missile systems also should be relatively easy to track.

The monitoring of missile launches can focus on a number of observable characteristics in both the missile itself and the infrastructure employed to manufacture and test it. Both missile launches and much of the infrastructure are visible to existing means of remote intelligence gathering. Satellite images of sufficient quality to be useful for verification purposes are becoming available to an increasing number of states, and even commercially to the public.

One possible way to develop ballistic missiles for military uses covertly is to disguise tests as space launches for civilian purposes. Despite the overlap in infrastructure and testing in the early phases of development, however, there are likely to be some detectable differences in such characteristics as flight trajectory, payload, guidance systems, and reentry, which could be used to distinguish a sophisticated military ballistic missile program from a civilian program. A missile control regime would still require additional means of verification, including routine and challenge inspections of space and missile launch facilities, monitoring of the destruction of missiles, monitoring of facilities previously used for ballistic missile production and those still used for civilian space purposes, and pre-launch inspection and observation of civilian space launches.

Conclusions

The effort to achieve a global missile control regime provides a kind of positive mirror image of the endless quest for military supremacy through technology. The militaries of the most powerful states, despite the impediments posed by vested interests in existing programs, attempt to do long range planning, in part because the development cycle for complex weapons systems commonly takes a decade or more. Disarmament advocates, too, must think long term – the time to cut off emerging


33 See J. Scheffran, “Verification of Missile Bans and Monitoring of Space Launches.”
arms races is now, before weapons systems which are only on the drawing boards today have developed unstoppable momentum and constituencies in respective military services, military research and development laboratories, military contractors, and parliaments.

A global missile control regime and the types of steps it should encompass could provide a common focus both for discussion and for organizing efforts for disparate elements of the world’s peace movements. These now include the long established anti-nuclear weapons organizations and the large but dispersed grassroots anti-nuclear movement, the growing movement against US space weapons deployment and ballistic missile defense, as well as growing peace movements in regions threatened by dangerous new arms races, particularly South Asia.

A comprehensive missile control regime provides a positive alternative to the illusory destabilizing techno-fixes of counterproliferation weaponry and missile defense, rather than implicit recourse to the arid scholasticism of deterrence doctrine and the premeditated terror of deterrence practice. Even if achieving a missile control regime is unlikely in the near future, discussion of such a regime might – by providing a different perspective on technology development, the dynamics of arms racing, verification issues, and the reasons claimed for constant upgrades to military forces – help break the current deadlock in nuclear arms reduction efforts. The chances for progress will be improved if the attention – and pressure – of broader civil society can be brought to bear, perhaps through a campaign for a comprehensive flight-test ban as the first step away from the abyss of a new arms race, a step which would be effective, simple for a wider public to understand, and relatively easy to verify.

Andrew Lichterman
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Science and the Future of Space

Our future Air Force Space Command (AFSPC) capabilities will enable a fully integrated Aerospace Force to rapidly engage military forces worldwide. Our space forces will move beyond being primarily force multipliers to also being direct force providers. Global real-time, situational awareness will be provided to our combatant commanders through space-based Navigation, Satellite Communications (SATCOM), Environmental Monitoring (EM), Surveillance and Threat Warning (S&TW), Command and Control (C2), and Information Operations (IO) systems. Robust and responsive spacelift and improved satellite operations capabilities will provide on-demand space transportation and on-demand space asset operations ensuring our ability to access and operate in space. Full spectrum dominance in the space medium will be achieved through total space situational awareness, protection of friendly space assets, prevention of unauthorized use of those assets, negation of adversarial use of space and a fully-capable National Missile Defense (NMD). Our ICBMs will continue to provide a credible strategic deterrence, while advanced, conventional weapons operating in or through space will provide our National Command Authorities (NCA) with formidable and flexible options for prompt, global, conventional strike.

Air Force Space Command, Strategic Master Plan FY02 and Beyond Executive Summary, February 9, 2000
Scientists’ and Engineers’ Pledge to Renounce Weapons of Mass Destruction

I pledge never to participate in:

• the design, development, testing, production, maintenance, targeting, or use of nuclear, biological, or chemical weapons or their means of deliver, or in
• research or engineering that I have reason to believe will be used by others to do so.

Why We Are Launching This Pledge Campaign

Science and its practical application have brought many benefits to society but have also at times been a source of profound social harm. This has particularly occurred when the uses of scientific knowledge have strayed outside the ethical boundaries of society, or escaped lawful political control.

Military technologies have proven to be among the most difficult applications of science to control. Today’s shield can become tomorrow’s sword, either in our own hands or in those of an adversary. The device one person or nation builds in order to protect, another may use to coerce – or when that fails, to destroy. Advances in modern weaponry, far from making war obsolete or more humane, have only increased its potential violence.

Among all weapons, weapons of mass destruction are especially abhorrent to the conscience of humanity. A category that includes nuclear explosives, radiological and chemical toxins, and biological agents, these weapons cannot, by their very nature, reliably discriminate between either combatants and civilians on the one hand, or belligerent and neutral countries on the other. Far more than conventional weapons, they can destroy the ecological foundation upon which any future peace could be built, and harm generations far into the future. Their destructive effects are disproportionate to any legitimate or rational military objective, and escalate the probability and violence of future conflicts in incalculable ways.

For this reason, whether used to coerce or to overtly destroy, these weapons can never serve justice. As the International Court of Justice has recognized, their overt use would be incompatible with the slowly but steadily expanding fabric of humanitarian law that constrains the violence of war. Further, their use as a coercive instrument offers potent political and military rationalizations for compensatory efforts by other states, factions within them, or nonstate actors, diminishing the security of all.

The use of biological and chemical weapons is banned under international law, and legal regimes outlawing their possession, with verification measures adopted or under development, are widely adhered to, including by the major powers. But there is as yet no comparable global and explicit prohibition on use of nuclear weapons, and the Nonproliferation Treaty prohibition on possession, while applying to almost all states, does not reach the most powerful, who have not fulfilled their legal obligations to negotiate effective measures relating to cessation of the arms race and the elimination of nuclear weapons.

Yet nuclear weapons remain in many ways the most dangerous of all weapons of mass destruction. In defiance of their disarmament obligations based on the Nonproliferation Treaty and other international law, and ignoring the requirements of humanitarian law, the states which possess them continue to insist on their prerogatives to retain, produce, and further develop these weapons, as well as to use them in battle. It is to the completion of this unfulfilled obligation that this pledge is especially addressed. Where nations and institutions lag behind, individuals can and must lead.
The continuing presence of nuclear weapons in the world’s arsenals casts a dark shadow on humanity’s hopes for the new millennium, and on the scientific community itself. In the United States alone, tens of thousands of scientists and engineers work on nuclear weapon systems, for the most part in powerful, semiautonomous institutions that effectively shape government policy in favor of continued and increased reliance on these terrible weapons. While these scientists and engineers hold a variety of personal views regarding disarmament, their participation gives to these institutions and their political advocates the power to perpetuate the continued maintenance and development of weapons of mass destruction. Regardless of their individual beliefs, each one of these scientists and engineers becomes a tacit supporter of nuclear weapons and other weapons of mass destruction.

Scientists may do research without the ability to know or control how their work might be used. This is especially true for military related science and technology. In most science, presumed benefit is likely to outweigh lack of perfect foresight. In the case of weapons of mass destruction, it does not.... Under established principles of international humanitarian law, willful ignorance or blind obedience in such matters do not by themselves constitute a plausible defense against the assignment of responsibility for crimes carried out with such weapons.

Nowhere on earth are more resources being devoted to developing, producing, and maintaining weapons of mass destruction than in the United States. In the US, new uses for nuclear weapons are being examined, new doctrines for nuclear weapon use are being developed, modified nuclear weapons with significantly-improved military capabilities are being designed and deployed, and the budget for research, development, testing, and production of nuclear weapons is approaching an all-time high. But while the US continues to outspend all the other nuclear weapons states in developing new infrastructure for nuclear weapons development, the others have not been idle. In fact, nuclear weapons are now increasing in legitimacy, sophistication, and importance in some if not all of the nuclear weapon states. Additionally, other nations continue to remain outside the biological and chemical weapons conventions....

Scientists and engineers embody traditions that are rooted in the devotion to truth and the enhancement of human dignity. As a human being, one cannot ignore the ethical responsibilities inherent in every aspect of life, including one's work. In taking this pledge, scientists and engineers categorically forswear work on weapons of mass destruction in all their forms, as a step toward ensuring that their talents and energies are devoted, not to the destruction of life, but to its protection and enhancement.

“Remember your humanity and forget the rest.” -The Einstein-Russell Manifesto, 1955

Los Alamos Study Group, 212 East Marcy St., Suite 10, Santa Fe, NM 87501 (http://www.lasg.org)


Tri-Valley CAREs, 2582 Old First Street, Livermore, CA, 94550 (http://www.igc.org/tvc)

Western States Legal Foundation, 1504 Franklin St., #202, Oakland, CA 94612 (http://www.wslfweb.org)
UK: Nuclear Verification

1. Verification of nuclear reductions and the global elimination of nuclear weapons will clearly involve a wide range of complementary capabilities and arrangements. The issues and interrelationships involved are of considerable complexity. The international community has in particular identified three main areas relevant to this process:

- The ability to verify that States are not testing nuclear weapons or other nuclear explosive devices;
- The ability to verify that States are not producing fissile material for nuclear weapons or other nuclear explosive devices;
- The ability to verify reductions and dismantlement of nuclear weapons and warheads in any State that might have produced or otherwise acquired them, and disposition of the fissile material arising.

2. The first of these areas is addressed by the verification arrangements established by the Comprehensive Nuclear-Test-Ban Treaty, and in particular its International Monitoring System, and by national technical means such as national civil seismological monitoring networks.

3. For non-nuclear-weapon States the second of these areas is addressed by the international safeguards system operated by the International Atomic Energy Agency (IAEA), including the Additional Protocol, and by regional organizations such as the European Atomic Energy Community (EURATOM). In addition, among the nuclear-weapon States, all civil enrichment and reprocessing facilities in the United Kingdom and France are safeguarded by EURATOM and liable to inspection by IAEA. Neither country has any remaining dedicated defence facilities for production of plutonium or high enriched uranium for nuclear weapons….

4. There are, however, no existing multilateral or international verification arrangements covering the reduction, elimination and dismantlement of nuclear weapons and the ultimate disposition of the fissile material they contain. Developing effective verification capabilities and arrangements in this area will be critical to sustaining systematic progress towards achieving reductions in nuclear weapons and their eventual elimination. Bilateral and multilateral arrangements on nuclear weapons require a very high degree of confidence that all participants are complying with their obligations, but the obligations of article I of the Treaty on the Non-Proliferation of Nuclear Weapons will impose stronger constraints on the ability of non-nuclear-weapon States and international organizations to participate in verification activity related directly to nuclear weapons and their components, as compared to verification of fissile material holdings, production and disposition. Verification of nuclear reductions and nuclear elimination is nevertheless clearly an area where all States have an interest in the development of further national and international capabilities as an essential contribution to the process of nuclear disarmament.

5. Work relevant to these issues is taking place. The United States of America has an extensive national nuclear verification research programme in its national laboratories. The United Kingdom has established a similar, smaller, programme. The United States/Russian Federation/IAEA Trilateral Initiative is examining ways and means to provide international verification that United States and Russian fissile material declared surplus to defence requirements is not diverted to further military use. The United States and the Russian Federation have also undertaken in the context of negotiations on a START III treaty to consider measures relating to the transparency of strategic nuclear warhead inventories and the destruction of strategic nuclear warheads and any other jointly agreed technical and organizational measures to promote the irreversibility of deep reductions,
including prevention of a rapid increase in the number of warheads. These programmes and commitments are a welcome development, and a firm indication of commitment to systematic and progressive efforts to reduce and eliminate nuclear weapons.

6. Highly intrusive verification will be less critical to the success of nuclear reduction agreements, while some nuclear weapons continue to exist as protection against potential non-compliance. But as stockpiles of nuclear weapons are reduced towards very small numbers and confidence in full compliance becomes more essential, verification requirements are likely to become increasingly rigorous. In particular, intrusive physical access to facilities and greater transparency of design information will become increasingly important. National technical means to detect undeclared facilities and materials will also have a role to play. The eventual achievement of the global elimination of nuclear weapons will require the development of extremely rigorous verification arrangements in order to provide the very high level of confidence and assurance that will be necessary. In particular, assurance would be needed that a warhead had entered the verification regime, and a continuity of knowledge would thereafter need to be maintained to ensure that no subsequent substitution of materials could take place without being discovered. However, no conceivable verification regime is likely to be able to provide an absolute guarantee of full compliance. Political acceptance of some level of risk, albeit as small as possible, will almost certainly be necessary.

7. There are three clear conceptual areas of verification for reduction and elimination of nuclear weapons:

- Authentication of warheads and their components;
- Dismantlement of warheads and their components;
- Disposition of the fissile material arising, to ensure irreversibly that it can no longer be used in nuclear weapons or other nuclear explosive devices….

11. Historical accounting is a lengthy and complex process. Moreover, in the light of its own experience and that of the United States and South Africa, in this area, the United Kingdom does not believe that it will be possible for any of the relevant States to be able to account with absolute accuracy and without possibility of error or doubt for all the fissile material they have produced for national security purposes over decades….

**Monitoring the nuclear complex**

14. In addition to the verification and disposition requirements set out above, a necessary element of the elimination of nuclear weapons will be measures to verify the destruction or conversion to other activities of the facilities used to develop, produce and maintain nuclear weapons. Knowledge and understanding of the infrastructure necessary will be critical to any verification regime. There is a range of existing and emerging technologies, skills and techniques that can be used to establish the existence and/or the status of a nuclear-weapon infrastructure complex and its operations, and this is an area where aspects of the approach underlying development of IAEA capabilities under the Additional Protocol may well be relevant.

**Working paper submitted by the United Kingdom of Great Britain and Northern Ireland to the 2000 NPT Review Conference**

http://www.reachingcriticalwill.org/NPTDocuments/mc1docs/ukwp.html
Section 4. Health, Environment, and Energy

Introduction

This section looks beyond the immediate requirements of a nuclear weapons convention to the larger context of the Nuclear Age. The development, testing, and production of nuclear weapons have had effects on health and environment that have yet to be fully understood. As these are better understood, they can also help determine the best approach to nuclear disarmament, taking into account health, environmental, and energy concerns.

The problem of nuclear waste, whether from the nuclear energy industry or dismantled nuclear weapons, has no solution yet. Susan Wareham and Clare Henderson counter arguments that propose a waste dump in Australia as an aid to nuclear disarmament. Harry Cohen explores some of the details of this proposal. Both pieces point to the dangers of existing nuclear materials, their effects on human life and the environment, and the need to seek better solutions.

Better solutions will also require coming to terms with damage already done, i.e., telling the truth. Arjun Makhijani suggests a global truth commission on the health and environmental damage caused by nuclear weapons. Another type of truth commission took place during the 2000 NPT Review Conference of Project EDNA (Engaged Democracy for the Nuclear Age), using the future to study the past and the present.

Learning the truth about the consequences of past and current policies is essential to addressing challenges yet to come. Complete nuclear disarmament will require a coordinated approach in order to minimize the variety of risks inherent in the handling, transportation, and storage of nuclear weapons materials. Such a framework would determine what materials are to be stored, in what form, for how long, and where, while further solutions to health, environment, and energy challenges are sought. A preliminary research agenda for safe nuclear disarmament along these lines is proposed at the end of this section.
Pangea: An Aid to Nuclear Disarmament?

Pangea Resources, a US company of which British Nuclear Fuels, Ltd. is a significant shareholder, is proposing to use Australia as the site for a high level international nuclear waste dump. Pangea has been arguing that the proposal facilitates nuclear disarmament and Australia’s national security.

Pangea argues that its proposal for an international nuclear waste dump in Australia offers a “global” solution to the nuclear waste problem. More recently, Pangea has been focussing on how an international waste dump will aid nuclear disarmament, as it may take waste from dismantled nuclear weapons. Yet ironically Pangea will not tie its proposal to any political commitments to phase out nuclear power or eliminate nuclear weapons.

Documentation produced for Pangea argues that an international nuclear waste dump located in Australia will enhance global security and further Australia’s regional security. Specifically it is suggested that the Pangea proposal will:

- support international efforts to reduce the proliferation of weapons of mass destruction and further the objective of nuclear disarmament;
- strengthen the alliance with the US;
- protect the global environment;
- contain terrorism and nuclear smuggling; and
- support the United Nations.

To examine these claims:

Reducing proliferation — NO

The claim that an international waste dump will reduce the proliferation of weapons of mass destruction and help nuclear disarmament is very deceptive because it implies that the absence of a good solution to nuclear waste is a barrier to nuclear disarmament. This is not the case. The barriers to nuclear disarmament are political.

The reality is that the nuclear weapon states have decided that they want to hang on to their weapons. It has nothing to do with the waste problem.

The reality is also that the Australian government can play a pivotal role in nuclear disarmament any time it likes; it does not need an international nuclear waste dump to do so.

Building the alliance with the US — NO

The idea that we should become the nuclear dump of the world in the hope that our friends will like us more suggests that perhaps the benefits of the friendship are a little one-sided.

Protecting the global environment — NO

It does not stop the production of the problem, it only puts it in one place. There is an imperative that existing nuclear wastes be stored appropriately but an underground dump could very well lead
to an out-of-sight, out-of-mind attitude which, given the toxicity and long lives of radioactive materials, could result in far greater threats to the environment in the longer term than above ground monitored storage.

**Containing terrorism — NO**

There is no doubt that the availability of plutonium poses a significant risk in terms of terrorism and proliferation. However, there are far more acceptable ways to deal with this risk than by transporting this material over the sea and land to a different site.

The amount of plutonium needed to produce a nuclear weapon is very small. The bomb that destroyed Nagasaki had about six kilograms of plutonium. To suggest that providing a nuclear waste dump is going to stop the diversion of all quantities as small as six kilograms of plutonium is clearly absurd.

**Supporting the UN — NO**

The proposal does not have United Nations (UN) endorsement. The UN would be better strengthened if the nuclear weapons states took heed of the majority of the world’s nations who have called for the speedy and total elimination of the world’s nuclear weapons.

The UN should be involved in governing mechanisms to deal with nuclear waste but solutions will only be workable in the context of legally binding agreements between the world’s nations – not short term proposals put forth by private companies with a profit imperative.

No nukes is the solution. The document prepared for Pangea states “in summary, the radioactive detritus of nearly five decades of using nuclear energy for both civilian and military purposes has created a serious and worsening security issue for the international community.” This has been the message of the anti-nuclear movement for many years.

The solution, however, does not lie in an out-of-sight, out-of-mind proposal as suggested by Pangea. The solution lies in agreeing to abolish nuclear weapons and phasing out nuclear power. Only then will we be in a position to address the hard issues of how we manage the wastes created by the nuclear industry.

Susan Wareham, President
Clare Henderson, Executive Officer
Medical Association for Prevention of War (MAPW), Australia
http://www.mapw.au.nu
**Pangea Exposed**

In November 1998 anti-nuclear activist Jean McSorley was given a video that promoted Australia as a site for an international nuclear waste dump. The video was produced by the US company Pangea Resources. It had been leaked to Friends of the Earth in the UK, and they had passed it to Jean for release in Australia, which she did in November 1998, with the support of the Canberra-based Campaign for a Nuclear Free Future.

The video extolled the virtues of a privately run, long term, high-level nuclear waste dump for outback South or Western Australia. The 15-minute video built an argument that nuclear waste is a problem that will not go away, that the best way of dealing with it is putting it somewhere in stable rocks, that these rocks must be away from population centres, in a country with strong democratic institutions, and that there are only a few places in the world where these conditions apply, and ... Australia seemed to be the best choice!

Although the proposal had been on the table for several years, discussions had been behind closed doors. Until the “unauthorised” release of the video, Pangea’s operations had been “private business.”

Despite clear opposition from Federal and State Governments Pangea continues to conduct a feasibility study in Australia.

**The Pangea Proposal**

In putting forth Pangea’s case, Dupont and Bergin, a consulting firm, argue that:

- there are about 200,000 tonnes of high level waste from the nuclear power industries throughout the world;
- in addition, about 10,000 tonnes are added each year; and
- plutonium stocks are in the order of 1,400 tonnes throughout the world.

Pangea proposes that:

- the site will “dispose” of about 75,000 tonnes of spent fuel over about 40 years, i.e., 2,000 tonnes per year;
- imports to Australia will be a combination of high-level waste, spent fuel assemblies from old reactors and intermediate-level waste;
- there will be a series of underground tunnels at a single level, over an area of about 7 x 2 kilometres, at a depth of several hundred metres;
- transport to Australia will be by ship in steel casks in around 70 ships built for this purpose;
- there will be dedicated port facilities;
- transport over land will be by rail line;
- all of this will be state of the art technology; and
- after 40 years “ultimate responsibility will rest with the Australian Government.”

**Three More Concerns Regarding the Pangea Proposal**

The safe transporting of this toxic material around the globe over a period of 40 years defies the laws of probability. Accidents can and do happen, and just one plutonium accident has enormous
capacity to damage life.

Potential leakage from the underground site could contaminate the groundwater and eventually enter the food chain. We suspect that such an isolated burial site for nuclear waste would mean that before too many years advanced, the repository could be forgotten.

The “dump” will be sited on indigenous land. Whichever bit of Aboriginal land is chosen, the result would be another insult in a long and shameful line to indigenous peoples who have suffered at the whims of the nuclear industry – from uranium mining to testing nuclear weapons and now to burying the waste from use in nuclear power.

Harry Cohen, Vice President
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Extensive research in the past two decades has shown nuclear weapon states have, first of all, harmed their own people without informed consent, in the name of national security. Nuclear weapons production workers have been on the front lines of this underside of the Cold War that nuclear weapon states have waged on their own people. But the manner in which this slow attack on health and the environment was carried out is still largely unknown and little understood. In the last two decades, a substantial idea of the damage has begun to emerge from the fog of denial and propaganda in only one nuclear weapon state – the United States.

The US record that is public so far is not at all reassuring. It features deliberate emphasis on production compared to health protection, massive and routine violation of health and safety regulations, deliberately misleading workers so as not to arouse concerns or give hazardous duty pay when both were clearly warranted, and subversion of democratic process.

Sloppy, incompetent science was a routine part of the dismal picture. The Department of Energy has admitted that, until 1989, no effort was made to calculate internal radiation doses to workers arising from the inhalation or ingestion of radioactive materials. Work by the Institute for Energy and Environmental Research (IEER) on data from the Fernald plant near Cincinnati, Ohio, where uranium for plutonium production reactors was processed, showed that in the 1950s and early 1960s, most workers were in fact overexposed due to uranium inhalation. Many probably also suffered kidney damage due to the toxicity of uranium as a heavy metal. Yet they were reassured that they were not being harmed.

As such information has become public, calls for redress of injustice, and for public disclosure, health care, and compensation have risen. The United States recently passed legislation giving most radiation workers the right to apply for compensation and medical treatment in case they get certain diseases. No other government has yet made as broad an admission of potential harm from radiation as has the United States, though some modest programs are in effect for a limited number of people in some places. Raw data on worker doses and working conditions (with due respect for worker privacy) are, for the most part, still secret. While Russia has become more open since the mid-1980s, and

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some data on worker exposures are emerging, there are still practically no raw data available to independent Russian researchers. Secrecy also holds sway in the other relatively open countries – France, India, and Britain. The situation in China, Pakistan, and Israel is far worse.

The pattern of keeping health and environmental abuses of their own people secret in the name of national security is anti-democratic to the core. It presumes that the people would not make sacrifices for the security of their countries. It presumes that top nuclear bureaucrats can make life or death decisions in defiance of established laws, norms, and regulations without the informed consent of the people.

The harm has extended well beyond factory boundaries to workers’ families, neighbors of the plants, and the general public. For example, an official study by the US National Cancer Institute showed that during the 1950s, a large portion of the US milk supply was contaminated with iodine-131 due to fallout from atmospheric nuclear weapons testing at the Nevada Test Site. No other nuclear weapon state has conducted a similar effort at being accountable to its own public. Moreover, the atmospheric testing of the weapon states contaminated milk supply well beyond their borders. It is interesting to note that maps of milk contamination and dose estimates published by the National Cancer Institute magically stop at the borders of Canada and Mexico. Uranium miners in non-nuclear weapon states have been injured by nuclear weapon states. Test sites have polluted former colonial areas, such as Algeria and Polynesia. Yet, no proper accounting has been forthcoming. But then, why would nuclear weapon states be accountable to people beyond their borders when they have failed to be accountable to those within?

The deliberate harm inflicted upon workers and the public at large in the course of nuclear weapons production and testing raises troubling questions about how national security policy has been formulated.

people it claims to protect without informing them, how can one be sure that the security policies themselves are not largely motivated by bureaucratic self-preservation rather than by the security and health interests of the community at large? This is by no means a rhetorical or theoretical question. There is strong evidence, for instance, that the decision to bomb Hiroshima and Nagasaki was motivated in part by the desire to justify the huge expenditure on nuclear bombs during the Manhattan project. The nuclear establishment feared that if the bombs were not seen as highly useful in the war effort, there would be relentless investigations for waste of money after the war. Such investigations would, no doubt, also have dimmed the prospects for continued large nuclear weapons budgets after the war.

A wide-ranging public discourse is needed within every nuclear weapon state about the health and environmental harm that they have inflicted upon their own people. A global debate is needed about harm outside the borders of those states. Much of that harm was knowingly inflicted. For instance,


an editorial in the Engineering alumni magazine of the University of California in 1960 noted that “nuclear testing has so far produced about an additional 6,000 babies born with major birth defects [worldwide].” Yet, it added that “you must weigh this acknowledged risk with the demonstrated need of the United States for a nuclear arsenal.” The editorial did not explain why children in Nigeria or Costa Rica or Indonesia should have major birth defects so that the United States could have a nuclear arsenal.

It is time for the United Nations General Assembly to establish an independent and open Truth Commission on the ravages that have been inflicted upon the world by nuclear weapons production and testing. That commission should not only examine the nature and extent of that harm, and whether and how deliberately it was inflicted; it should recommend ways in which the world's people can hold nuclear weapons establishments accountable. It should also examine whether and to what extent the security arguments that have been claimed for nuclear weapons have been constructed with the aim of keeping people ignorant and fearful so that the weapons bureaucracies might perpetuate themselves. Such an examination would be of some considerable relevance today, given that nuclear weapons establishments are still refusing to meet their nuclear disarmament commitments under the Nuclear Non-Proliferation Treaty and that people are still getting ill and dying from the harm that nuclear weapons establishments have inflicted upon them.

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http://www.ieer.org

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40 April 1960 editorial in the *California Engineer*, reprinted in the *California Engineer* in 1990.
Engaged Democracy for the Nuclear Age: A Nuclear Truth Commission

On May 1st 2000, during the UN Non Proliferation Treaty Review Conference, Project EDNA (Engaged Democracy for the Nuclear Age) and WILPF (Women’s International League for Peace and Freedom, UN Office) staged a Nuclear Truth Commission. The aim of this successful, ongoing collaboration is to further the disclosure of knowledge and personal experience by creating a public forum for former military personnel, nuclear scientists and workers, and representatives from downwind and indigenous communities. Inspired by the South African Truth and Reconciliation Commission, it was not difficult to conceive of people coming together, from disparate communities, to provide testimony regarding the continued use and abuse of nuclear technology. But who would stand in judgment of what the past three generations have done?

The boundaries between victim and perpetrator are blurred in the nuclear age. We have been told that bombs have kept the peace. We have been told that nuclear energy is safe. Yet, the products and by-products of these processes not only endanger life at present, but due to the long-lived nature of radioactive materials, they pose an enduring threat to the future. To acknowledge this unique temporal condition, the NPT Nuclear Truth Commission established a panel of listeners from the future. After all testimony was given, each “future delegate” reflected on the stories they had heard, and offered strength and vision to sustain the struggle against the proliferation of nuclear technology: from uranium mining to radioactive waste “disposal.” It was a powerful and moving experience for all who attended.

We are grateful to the following people for preparing testimonials at this inaugural event:

ROB GREEN, retired UK Naval Commander
JACQUI KATONA, Australian Aboriginal activist
PILULAW KHUS, Native American activist
MARY OSBORN, Three Mile Island downwinder
RICHARD SALVADOR, Pacific Islander
SETSUKO THURLOW, Hiroshima survivor
ANDREAS TOUPADAKIS, former chemist at Lawrence Livermore National Lab

Transcripts of the Nuclear Truth Commission are being produced in a document that will also include a manual for organizing nuclear truth commissions locally. We hope it will be widely disseminated, so that truth telling and remembering the future will become standard practice inside and outside the international nuclear fraternity, and will encourage transparency and openness in nuclear decision making.

Kathleen Sullivan
Project EDNA (Engaged Democracy for the Nuclear Age)
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Key Research Questions for Safe Nuclear Disarmament

The culture of nuclear weapons production gave inadequate attention to health, safety, and the environment. These concerns must be paramount as nuclear weapons are dismantled and destroyed. Patterns established by weapons facilities, where production, security, and secrecy have been the dominant values, undermine confidence in the ability of these institutions to make such a transition successfully. Major new research and policy agendas are required to ensure that approaches to nuclear disarmament are consistent with the larger purposes of the abolition paradigm.

Institutional Concerns

1. Who are the appropriate people to conduct the necessary research; what credentials and training do they require; what affiliations should they have (or not have)?
2. How should independence be maintained and conflicts of interest be prevented?
3. What information already exists and who controls it? What information needs to be acquired through new research? Can access to all necessary information be ensured?
4. Can this body acquire and maintain trust among DOE employees and be assured of cooperation by current DOE contractors?
5. What specific knowledge would this body seek and from whom, and who should act on that knowledge once it is gathered?

The Research Agenda

1. What are the exposure risks of dismantling, handling, transporting, and securely storing nuclear weapons and their components? Which tasks require human contact?
2. What kinds of facilities are needed? Should new facilities be built or can existing DOE (or other) facilities be converted? Who should staff them?
3. In what form and by what means should nuclear materials be transported? What vehicles and what routes would minimize risks?
4. What material, in what form, is to be stored? Which materials are radioactive and which are toxic? Where, and for how long, should materials be stored, and in what form? How should radioactive and toxic materials be protected against diversion in a way that minimizes exposure risks?
5. What health protocols are appropriate for different tasks? What means might be employed to prevent exposure to radioactive or toxic materials? How frequently should workers be examined for potential exposure-related health problems? How should emergencies best be handled?
6. Will nuclear disarmament activities pose exposure risks to the public? What risks? How can they be kept to a minimum?
7. What is the appropriate balance between secrecy (to prevent diversion of nuclear materials) and openness (to provide workers and nearby communities with sufficient information about potential dangers)?
8. How do health, environment, and safety considerations change in a security context that does not depend on nuclear deterrence or require the production of nuclear weapons?
9. What measures are needed to ensure that concerns about safe nuclear disarmament are not used as an argument for resisting disarmament?


http://www.ippnw.org/MGS
Acronyms

ABM Anti-Ballistic Missile (Treaty)
ALP Australian Labor Party
CD Conference on Disarmament
CFE Conventional Forces in Europe (Treaty)
CND Campaign for Nuclear Disarmament (UK)
CSCE Conference on Security and Cooperation in Europe
CTBT Comprehensive Nuclear Test Ban Treaty
CWC Chemical Weapons Convention
DOD Department of Defense (US)
DOE Department of Energy (US)
FMCT Fissile Materials Cut-off Treaty
HEU Highly enriched uranium
IAEA International Atomic Energy Agency
IEER Institute for Energy and Environmental Research
IPPNW International Physicians for the Prevention of Nuclear War
ICBM Intercontinental ballistic missile
ICJ International Court of Justice
INF Intermediate-Range Nuclear Forces (Treaty)
LSNW Low Salience Nuclear World
MAD Mutual Assured Destruction
MNWC Model Nuclear Weapons Convention
MP Member of Parliament
N5 Nuclear 5 (variant of P5)
NAC New Agenda Coalition
NAG New Agenda Group (variant of NAC)
NATO North Atlantic Treaty Organisation
NBC Nuclear, biological and chemical (weapons)
NFU No First Use
NGO Non-governmental organization
NIF National Ignition Facility
NMD National Missile Defense
NNWS Non-Nuclear Weapons State
NPT Non-Proliferation Treaty
NTM National Technical Means
NWC Nuclear Weapons Convention
NWFW Nuclear-Weapon-Free World
NWS Nuclear Weapons State
OPCW Organisation for the Prohibition of Chemical Weapons
P5 Permanent members of the Security Council (US, Russia, China, UK, France)
Also the official nuclear weapon states under the NPT
PSR Physicians for Social Responsibility
SALT Strategic Arms Limitation Talks
START Strategic Arms Reduction Treaty
TMD Theater Missile Defense
UN United Nations
UNGA United Nations General Assembly
WMD Weapons of mass destruction