Fulfilling the NPT

Strengthened Nuclear Safeguards

VERTIC Briefing Paper 00/2

Oliver Meier

April 2000

Executive Summary

• Strengthened nuclear safeguards will enhance the nuclear non-proliferation regime by increasing the mutual confidence of states parties that the Nuclear Non-Proliferation Treaty (NPT) is being fully complied with.

• A review of the benchmarks on nuclear safeguards contained in the 1995 NPT Review Conference's Principles and Objectives shows that small but important steps have been taken in strengthening safeguards since the conference.

• The International Atomic Energy Agency (IAEA) has begun implementation of its new Strengthened Safeguards System (SSS). This system will give the Agency and its member states the ability to gain a comprehensive picture of states parties' nuclear activities, clarify issues of concern and actively investigate cases of suspected non-compliance.

• Full implementation of the SSS is reliant on states concluding an Additional Protocol to their existing safeguards agreements with the IAEA based on a Model Additional Protocol approved in May 1997.

• NPT member states have not given the necessary political priority to concluding, signing and ratifying Additional Protocols. Since May 1997 the IAEA Board of Governors has approved just 49 Additional Protocols, only nine of which have entered into force.

• The situation is made more acute by the fact that, while there has been an increase in the number of full-scope safeguards agreements since the 1995 Review Conference, 55 NPT non-nuclear weapon states (NNWS) parties still have no safeguards agreement, putting them in breach of their legal obligation under Article III of the NPT.

• The record of the nuclear weapon states (NWS) parties to the NPT is also patchy: while all have signed Additional Protocols, they have negotiated them so as to exclude important nuclear activities and none have been ratified.

• The involvement of non-NPT member states in the safeguards regime can be broadened by gradually expanding the scope of safeguards to more facilities and commencing negotiations on a fissile material treaty.

• All states that have not done so should be urged to comply with Article III of the NPT and to adopt and implement an Additional Protocol at the earliest possible date.

• The 2000 Review Conference should clearly identify the reasons for the slow progress in implementing the SSS and renew the call for strengthened safeguards in its forward looking document.

• The IAEA should be given the necessary political, financial and technical support for the SSS.
The Nuclear Non-Proliferation Treaty (NPT) faces many serious challenges, including the lack of progress in disarmament, a revival of the salience of nuclear deterrence, and attacks on central arms control norms, for example as a result of the nuclear tests by India and Pakistan. While these issues receive high political and public attention, the reform of nuclear safeguards conducted by the International Atomic Energy Agency (IAEA) is proceeding largely unnoticed.

About ten years ago the IAEA began to revise its verification approach through what eventually became known as the Strengthened Safeguards System (SSS). This process culminated in the adoption in May 1997 by the IAEA Board of Governors of a Model Protocol additional to existing safeguards agreements, which would permit the application of new safeguards measures in states that signed and ratified such a protocol. The SSS will enable the Agency to first broaden and then focus its verification activities more effectively on areas of concern. This will bring NPT verification into line with other modern verification regimes, such as those of the Comprehensive Nuclear Test Ban Treaty (CTBT), the Chemical Weapons Convention (CWC) and the verification protocol for the Biological and Toxin Weapons Convention (BTWC) that is currently being negotiated in Geneva.

But progress in implementing strengthened safeguards is still slow and in danger of running out of steam. Some NPT member states are not giving adequate support to the IAEA’s efforts, while others have not even fulfilled their legal obligations under Article III of the NPT to conclude full-scope safeguards agreements with the Agency. This report will look primarily at the role of NPT states parties in strengthening nuclear safeguards. First, the importance of strengthened safeguards is discussed, then a short summary of the strengthened safeguards measures is given. Progress made to date is described and some reasons why progress has been slow are identified. Finally, current efforts to strengthen safeguards are compared to the benchmarks laid out in the 1995 NPT Review Conference’s Principles and Objectives and some recommendations for the 2000 NPT Review Conference are given.

In focusing on the role of states in strengthening safeguards, this paper does not imply that the onus is solely on states parties. The IAEA has a vital part to play in strengthening safeguards and in further reforming its operations. The Agency, in implementing the SSS, must fundamentally revise the way it verifies compliance of member states with their NPT obligations. It must shift from a quantitative accounting of nuclear materials to a proactive and qualitative verification policy. This shift will affect the way the Agency collects and analyses information, draws conclusions about states’ compliance, applies modern verification technologies, and plans and conducts inspections. Any one of these changes would represent a formidable challenge for a large organisation affected by bureaucratic inertia and bound by an organisational culture developed over decades.

Because this report focuses on efforts to strengthen IAEA safeguards, other activities that aim to improve control over fissile materials and nuclear weapons technologies, such as export control regimes, unilateral and bilateral steps to increase transparency on fissile material holdings and place those materials under safeguards, as well as the Triad Initiative between Russia, the United States and the IAEA, are not dealt with in depth. These arrangements do, however, have an important role to play as long as safeguards are not universal.

The importance of strengthening safeguards

There are good reasons why NPT states parties should give greater political attention to safeguards reform efforts.

First, the means currently available to verify NPT commitments are insufficient. IAEA safeguards are based on the assumption that all nuclear materials are not only being safeguarded, but also being accounted for. Against this, nuclear proliferation is a continuous process, which requires the IAEA to be able to verify that all nuclear material is safeguarded. This means that the IAEA is faced with the task of monitoring nuclear activities on a worldwide scale, trying to ensure that all nuclear material is not being diverted to proliferation.

Second, strengthened safeguards add a new confidence building component to the NPT by giving fully compliant states a better opportunity to demonstrate their bona fide non-proliferation credentials. Accusations of violations continue to be raised by different intelligence services and weaken trust in the NPT’s ability to curb nuclear proliferation. Strengthened safeguards will enable the international community to more effectively verify whether such allegations are true and provide accused states with better opportunities to demonstrate their compliance.


1 Safeguards can be defined as ‘the technical means used to verify that a state’s nuclear activities are in conformity with the undertakings that the state has given about the nature and scope of these activities’. International Atomic Energy Agency, ‘The Evolution of IAEA Safeguards,’ International Nuclear Verification Series, no. 2, IAEA, Vienna, Nov. 1998, p. 32.

Third, strengthened safeguards will foster nuclear disarmament by laying the foundations for a treaty on final disarmament measures and increasing transparency on more nuclear materials and facilities. Ultimately, strengthened safeguards are a stepping stone towards comprehensive disarmament measures such as a nuclear weapons convention.

Fourth, the failure of a significant number of NPT states parties to implement strengthened safeguards could be interpreted as weakening the international commitment to the NPT. Such a development would also weaken the IAEA, which is the only international institution mandated to implement components of the NPT.

IAEA SAFEGUARDS: TRADITIONAL AND STRENGTHENED

Article III of the NPT obliges each non-nuclear-weapon State Party to the Treaty... to accept safeguards, as set forth in an agreement to be negotiated and concluded with the International Atomic Energy Agency... within 18 months after accession to the treaty. For non-nuclear-weapon states this means concluding full-scope safeguards (FSS) modeled on the 1972 document INFCIRC/153. Under this traditional safeguards system, the IAEA verifies compliance with the NPT under the assumption that states declare all relevant nuclear activities. The Agency inspects declared facilities and checks whether the information provided by the state is correct. The main tool is material nuclear accounting: inspectors go to pre-arranged locations and check the location, type and quantity of declared nuclear materials. The main purpose of IAEA verification is the timely detection of the diversion of significant quantities of declared nuclear material.

Full-scope safeguards as implemented do not enable the IAEA to detect undeclared nuclear activities because it cannot check whether declarations are complete. The main purpose of traditional safeguards is therefore to make it much more difficult for states to use safeguarded nuclear facilities to make weapons without detection. Thus, while the IAEA is good at detecting the diversion from declared facilities of declared nuclear material for the secret production of nuclear weapons, it is less capable of detecting attempts to violate the NPT if wholly separate undeclared nuclear facilities are used.

The traditional safeguards system does contain some elements to check for undeclared activities in declared plants. Examples include unannounced inspections in certain parts of centrifuge enrichment plants and strict inspection criteria for unreported production of nuclear weapons material at large research reactors. Moreover, the Agency has long had the right to conduct 'Special Inspections' of declared and undeclared facilities. However, this right was not invoked until 1993 and then only once (in the case of North Korea). Special inspections have gained a political sensitivity that makes them difficult to use as effective verification tools.

The shortcomings of this safeguard system became apparent when the IAEA discovered the nature and scope of the clandestine Iraqi nuclear programme after the Gulf War in 1991. Calls for reform of nuclear safeguards were reinforced by the inconsistencies discovered during initial inspections in North Korea in 1992 and the subsequent refusal of the North to allow inspections to Pyongyang to live up to its safeguards commitments. The positive demonstration by South Africa of the effectiveness of verification when a state co-operates with the IAEA in surrendering its nuclear weapons capability after the country signed the NPT in 1991 and entered into a comprehensive safeguards agreement was another contributing factor for safeguards reform. But it was really the Iraqi 'shock' that triggered the most comprehensive reform of the safeguards system since the early 1970s. Programme 93+2 was officially launched in November 1993, when the Board of Governors of the IAEA adopted a report which tasked the Director General (DG) with developing proposals to reform IAEA safeguards. The expectation at the time was that a stronger (and more efficient) safeguards package could be adopted before the NPT Review and Extension Conference in May 1995. The report submitted by the DG to the Board of Governors in March 1995 was, however, unacceptable to some member states because it was too general in its recommendations and did not clearly lay out the financial implications of reform. Programme 93+2 turned out to be Programme 93+4 because of differences between IAEA member states about the scope, character and legal status of additional verification measures.

However, in June 1995 the Board of Governors identified measures to strengthen safeguards which could be implemented under existing legal arrangements. These so-called Part 1 measures included improved use of remote monitoring technologies, (e.g. electronic seals), unannounced routine inspections at declared facilities, better information measures such as environmental samples and, with designated points during routine safeguards activities), information on past nuclear activities and deeper co-operation with States' Systems of Accounting and Control (SSACs). The fact that Part 1 turned out to be quite extensive indicated that the IAEA could have applied more stringent safeguards in FSS countries such as Iraq even before Programme 93+2 was launched.

In July 1996 the new 'Committee on Strengthening the Effectiveness and Improving the Efficiency of the Safeguards System' (Committee 24 or COM24) started its work. COM24 was in charge of developing a new legal text, so-called Part 2 verification measures. The committee was open to participation by all IAEA member states and all other NPT states parties and chaired by the DG. In April 1997, after intensive negotiations, COM24 presented 1997 Model Protocol to the IAEA Board of Governors. During a special session on 15 May 1997, the Board of Governors adopted INFCIRC/340, entitled Model Protocol Additional to the Agreement(s) between State(s) and the International Atomic Energy Agency for the Application of Safeguards.

Veriﬁcation Under the Additional Protocol

The Protocol outlines rights and obligations of the IAEA and of any state that signs and ratifies such a document. Despite its name, the Protocol and the SSS are not simply 'add-ons' to traditional safeguards, but could result in a fundamental shift in the way NPT safeguards are implemented. The Additional Protocol is intended to increase the Agency's ability to detect secret nuclear weapons programmes connected either to declared or undeclared facilities. Under Article 2 of the Protocol, the state party is required to provide the...
Agency with far more information about its nuclear activities than previously required under traditional safeguards. This will permit the Agency to develop a comprehensive picture of a country's nuclear programme, enabling it to place declared nuclear materials and facilities in a broader context. The inclusion of previously unavailable information (from open sources and data collected by modern verification means such as environmental sampling and satellite imagery) and the ability to cross-check between different sources of information will help verify that states are in compliance with their safeguards agreements. In a best case scenario, the IAEA will have a complete picture of a state's nuclear activities, from the 'front-end' of the nuclear fuel cycle, namely the import or production of nuclear materials, including sources and pre-safeguards materials, to the 'back-end', the disposition of nuclear waste. Expanded declarations will also enable the Agency to place reported activities in a historical context, as states are obliged to declare certain past activities as well as future plans.

Since it is the job of the IAEA to verify that states' declarations are complete and correct, expanded declarations necessitate increased physical access for inspectors to nuclear facilities. Because many non-nuclear weapon states (NNWS) (and some nuclear weapon states) fear that the new verification measures required under the Additional Protocol would unduly increase the burden on their nuclear industry, it was decided that 'the Agency shall not mechanistically or systematically seek to verify the information' provided in expanded declarations. Verification activities under the Additional Protocol are expected to be driven in part by questions, including with regard to inconsistencies, which arise from the declarations, and in part by random checks. This is a fundamental shift from the mechanistic accounting for nuclear materials undertaken under the traditional approach.

'Complementary access' arrangements will greatly expand the scope of IAEA on-site activities. Article 5 of the Additional Protocol gives the Agency access to any place on a site, research facilities, firms and any location specified by the Agency to conduct location-specific environmental sampling. Inspectors will be able to 'look around' at declared sites and request access to any buildings on such sites in order to resolve questions arising from the IAEA's inconsistency analysis or to assure the absence of undeclared activities or material. They are also able to check the status of decommissioned sites and facilities. For comprehensive access to buildings at a declared site, inspectors are instructed to give two hours' advance notification (but in exceptional cases may demand faster access). For access to other sites (declared or undeclared) 24 hours' advance notice is mandatory. If necessary, managed access provisions are to be applied. Access under the Additional Protocol will thus cover the middle ground between 'Special Inspections' and routine inspection under the traditional safeguards regime.

THE CURRENT STATE OF PLAY

The Record of States Parties

States are under no legal obligation to conclude Additional Protocols. However, when the negotiations on the Model Additional Protocol were finished, there was a general expectation that the majority of NNPT states parties would sign or ratify them by the 2000 NPT Review Conference. Today, only 49 out of 187 NNPT states parties have concluded a Protocol, and only nine of these have entered into force.

The low number of Additional Protocols that have entered into force is the most striking weakness in efforts to strengthen safeguards. With the exception of Japan, a Protocol has not entered into force for any state with substantial nuclear activities. The small number of signatories is also worrying. The record of some regions is especially bad: only two African countries (Ghana and Namibia) and only three Latin American countries (Brazil, Peru and Uruguay) have signed. In the Middle East, Jordan is the only country to have signed and ratified a Protocol.

There are a number of reasons for the slow progress. First, negotiations on the Model Protocol took longer than expected. The two-year delay may have given the impression that the additional measures are less urgent than had been initially argued by the proponents of 'Programme 93+2'.

Second, states may not see an immediate benefit from signing a Protocol, beyond contributing generally to non-proliferation. Indeed, in the short-term, expanded declarations increase the burden on member states. Increased inspection activities are likely to take place immediately after a Protocol enters into force because the Agency will be eager to verify the new information it receives from the state party.

Third, national legislative processes are slow, causing a delay in the entry into force of Additional Protocols. Both expanded access to buildings and complementary access provisions may require approval of member states' parliaments, as may ratification. In the case of the EU, all non-nuclear EURATOM members have to ratify before the Protocol before can enter into force for them. While France and the United Kingdom are EURATOM members, they have separate safeguards

Sources: Private communication with the IAEA and www.iaea.org/worlddata/Programmes/Safeguards/ag_protocol.shtml. Information correct as of 15 April 2000.
agreements with the Agency which could enter into force before the ratification of all other EU states.

Fourth, there is a lack of political pressure towards conclusion of Additional Protocols. In comparison with other nuclear arms control issues, safeguards range low on the political and public agendas. Safeguards are often perceived to have no immediate effect on disarmament. It is left to some states with an interest in universal adoption of the Protocol to ‘lead by example’. The IAEA is actively trying to persuade member states to conclude Additional Protocols in bilateral consultations and through regional agreements like Nuclear Weapon-Free Zones. There have also been repeated calls during meetings of the NPT Preparatory Committees for broader acceptance of strengthened safeguards measures.

Last, but not least, the poor historical record with regard to the fulfilment of Article III safeguards obligations has set a bad precedent for the Additional Protocol. Thirty-eight NPT states party have not concluded any safeguards agreements with the IAEA. Fourteen states have negotiated such agreements but have not ratified them, thereby preventing their application. All of these states are in violation of their treaty obligations under Article III of the NPT. The fact that a quarter of all treaty parties neglect to fulfil a substantial part of their obligations is unique in multilateral disarmament. Since some kind of safeguards agreement needs to be in place before an Additional Protocol can be concluded, this situation needs to be urgently addressed.

The challenge in the future will be to bring more Additional Protocols into force and to convince those states to sign that have so far shown no intention of doing so.

The Nuclear Weapon States

Although the NPT is discriminatory, so are nuclear safeguards. China, France, India, Pakistan, the United Kingdom and the United States are under no obligation to conclude safeguard agreements with the IAEA. As nuclear weapon states, they have the ‘right’ to keep their nuclear weapons complexes off-limits to international inspections. All NWS have concluded so-called ‘voluntary offer agreements’ with the IAEA which place some of their facilities under international safeguards. The United Kingdom and France have gone one step further: they are the only NWS that have put all non-military nuclear material under safeguards.5 But all NWS can withdraw nuclear materials from their civilian activities for military purposes.6

While NNWS are obliged to accept the Model Additional Protocol without substantial changes, NWS can depart from the Model when negotiating their Additional Protocols. All have done so. The United States Protocol, for instance, excludes ‘instances where its application would result in access by the Agency to activities with direct national security significance to the United States or to location and information associated with such activities’. The US also maintains the right to use ‘managed access in connection with activities with national security significance in the United States’.7 This exception severely limits the application of extended declarations and inspection rights.

The United Kingdom has not included such a broad lacuna in its Additional Protocol, but its version requires it to declare only such activities that are conducted ‘for or in co-operation with, or otherwise relevant to, a non-nuclear weapon state’.8 This important restriction applies, inter alia, to all nuclear research and development activities, enrichment facilities and exports and imports of nuclear materials to and from non-EURATOM countries.

Some argue that implementing Additional Protocol measures in the nuclear weapon states has little or no value since they are mainly intended to detect clandestine activities, while the NWS are overt possessors of nuclear weapons under the NPT. But strengthening safeguards in NWS is not a waste of IAEA resources for several reasons. First, a regime where the NWS would be free of all safeguards would be perceived as unjust by many NNWS, especially those with large nuclear industries.

Second, NWS can be a source of proliferation. The Additional Protocol, which also provides the ‘supply side’ of the proliferation equation through its expanded declarations on exports and imports of nuclear materials and technologies, has an important role to play in NWS.9

Third, safeguards can ‘lock in’ some of the unilateral and bilateral transparency and disarmament measures that some NWS have taken with regard to their fissile materials. These measures are usually only politically binding, while safeguards agreements with the IAEA are legally binding. Agreements concerning withdrawal of material from weapons programmes should therefore be covered by safeguards agreements and made irreversible.10

Fourth, expanding the scope of safeguards in NWS can pave the way for conclusion of a truly comprehensive and non-discriminatory verification system, for example in the context of a nuclear weapons convention. The creation of such a system is likely to be a long and incremental process. By constraining nuclear material and facilities put under safeguards now, the fewer questions are left to be resolved. By voluntarily accepting as many of the verification responsibilities contained in the Additional Protocol as possible, the NWS can send a signal that they accept their Article VI obligations to eliminate nuclear weapons.

The IAEA’s Role in Implementing Additional Protocols

Given the small number of Protocols that have entered into force, the IAEA is under little pressure to quickly develop its new verification procedures to implement them. It has started to revise many aspects of its safeguards procedures.

A strengthened safeguards system will require the incorporation of new information into its analyses, the application of new verification technologies, changes in the conduct of inspections, and the integration of traditional and strengthened safeguards. Eventually, this different building blocks need to be harmonised and united in a single new safeguards system.

Probably the most important innovation of the safeguards system is the analysis of new sources of information to assist the Agency in making judgements on compliance. Such new information comes mainly from ‘open sources’ and new monitoring technologies. The information provided by a state in its declaration, collected during inspection activities and obtained through the analysis of open sources, will enable the Agency to ask wider questions about that state’s nuclear programme. It will be thus more difficult for a treaty violator to maintain a secret nuclear weapons programme without inconsistencies appearing in the different kinds of information obtained by the Agency.


11 Open sources include published literature, 'grey' literature, electronic media, organisational contacts. See Hans Hermann Remagen and Bernd Richter, 'Implications for Research and Development in Safeguards Technologies,' in Eckel and Stein, p. 123.

NPT States Parties That Have Not Concluded Safeguards Agreements With The IAEA


NPT States Parties That Have Concluded Safeguards Agreements With The IAEA

Cambodia, Cameroon, Equatorial Guinea, Gabon, Gaza, Haiti, Kuwait, Kyrgyzstan, Laos, Oman, Moldova, Sierra Leone, Tanzania and Togo.

NB. Albania has a sui generis comprehensive safeguards agreement, while Colombia and Panama have comprehensive safeguards agreements pursuant to the 1967 Treaty of Tlatelolco.


16 Between May 1997 and the end of 1999 the UK, for example, gave 20 advance notifications of the withdrawal of small quantities of nuclear material from safeguards. The British government has also made clear that it does not intend to give up the right to withdraw nuclear material from safeguards. See House of Commons, Written Questions, ‘Nuclear Materials (Safeguards)’, 19 Jan. 2000, Column: 487W.

New Verification Techniques
Data from two new monitoring technologies—environmental sampling (ES) and satellite imagery—will be incorporated into comprehensive safeguards. ES is a powerful surveillance tool because the leakage of fissile isotopes into the environment cannot be completely and reliably prevented in any nuclear weapons programme. Modern ES technology, direct and indirect isotopes in nanogramme quantities and particles as small as a micron.21 There are two kinds of environmental sampling; IAEA inspectors can take (swipe) samples at uninspected facilities. They are air-samples on a permanent or ad hoc basis, monitoring for the presence of isotopes that are indicative of non-nuclear activities (this is known as wide-area environmental sampling). Wide-area sampling can detect the generation of weapons-grade material at undeclared sites. While the Additional Protocol mentions the use of wide-area environmental monitoring, its implementation requires approval by the IAEA Board of Governors and the consent of the individual member state in which it is used.

The potential for verifying compliance with NPT obligations from space is better than in other weapons of mass destruction regimes because of the size of certain nuclear facilities and their characteristic features. Advances in satellite technology and dedicated commercial-satellite imagery from space now strengthen the case for incorporating the use of satellite images into NPT verification.22 The IAEA can use satellite imagery to verify site designs, observe the operational status of power plants and certain production facilities and detect structural changes at sites or facilities. Satellites provide an efficient means to monitor remote locations such as mines and can be used to detect and identify undeclared facilities.23 Satellite imagery can also be useful in pinpointing the targets of on-site inspections, thereby making them more efficient.

Complementary access provisions will change the way IAEA inspectors do their job. In the past, inspectors focused on accounting for declared material and applying approved and certified safeguards measures. In their new role, inspectors will become familiar with the entire nuclear programme of the country they are inspecting. They will have increased authority to request complementary access to a site that they insist and to note inconsistencies. Finally, a whole new category of nuclear installations will be inspected, including front- and back-end sites, as well as research and development facilities. To implement this new approach the IAEA has instigated a 'pre-training programme for IAEA inspectors. Courses include environmental sampling, enhanced observation, understanding the nuclear fuel cycles and their purification pathways, enhanced design of information review, and the electronic transmission of encrypted data.24 With the first Additional Protocols being applied, the Agency has also begun to conduct trial inspections under new complementary access provisions.25

Integrated Safeguards
The strengthening of nuclear safeguards will enable the IAEA to redirect verification resources towards those countries where questions about the completeness and correctness of declarations persist. Integrated Safeguards can be harmonized in an agreement with the safeguards by reducing the verification ‘burden’ on certain NNWS without affecting verification effectiveness.26 To face this challenge, the Agency has started a new, coherent approach on how to integrate traditional and new safeguards. A reduction of ‘traditional’ safeguards activities will also become inevitable because the Agency has to take on additional verification responsibilities under a zero ‘growth’ budget. The first hard test for the integrating of safeguards is likely to be Japan, which ratified its Additional Protocol in December 1999.

There are three different fora looking at how new safeguards can be brought in effect. There is no agreement among members on how best to proceed. But the IAEA has started a series of meetings in order to find a common approach.27

The IAEA has defined ‘integrated safeguards’ as the ‘optimum combination of all safeguards measures available to the Agency under comprehensive safeguards agreements and Additional Protocols which achieve the maximum effectiveness and efficiency with a minimum of burden.’28 The Development of Integrated Safeguards: A report by the Director General, GOV/INF/2000/4, International Atomic Energy Agency, Board of Governors, Vienna, 9 March 2000, p. 2.

The Principles & Objectives agreed by the 1995 NPT Review and Extension Conference laid out a five-year roadmap for the development of safeguards.29 An evaluation on the eve of the 2000 Review Conference reveals limited, but important progress:

- The International Atomic Energy Agency is the competent authority for harmonized safeguards agreements and the status of the Agency and the safeguards system, compliance with its safeguards agreements with States parties undertaken in fulfilment of their obligations under article III, paragraph 1, of the Treaty. No body should be used to undermine the authority of the International Atomic Energy Agency in this regard.

The May 1997 agreement on the strengthening of safeguards and the adoption of the Model Additional Protocol by the Board of Governors has been a big step forward in strengthening the authority of the IAEA. At the same time, the small number of significant declarations and ratifications of Additional Protocols is an indication that NPT states parties’ support for strengthening the authority of the NPT varies widely.

- All States parties required by article III of the Treaty to sign and bring into force comprehensive safeguards agreements and which have not yet done so should do so without delay.30

Here, the record is mixed. Since 1995 an additional nineteen NPT states parties have brought comprehensive safeguards agreements into force. Four have negotiated such agreements which have not yet entered into force. However, a substantial number of NPT parties remain in breach of their treaty obligations.

- International Atomic Energy Agency safeguards should be regularly assessed and evaluated. Decisions adopted by its Board of Governors for the implementation of safeguards support should be supported and implemented and the Agency’s capability to detect undeclared nuclear activities should be increased.

A review of this paragraph’s exhortations reveals a mixed picture. The process of assessing and evaluating safeguards has been partly completed. Whether the IAEA’s Strengthened Safeguards System and further recommendations can be successfully implemented will be seen. Support of IAEA members for these efforts, except for the conclusion of Additional Protocols has been good so far.

- Also, States not party to the Treaty on the Non-Proliferation of Nuclear Weapons should be urged to enter into comprehensive safeguards agreements with the Agency.

No progress has been made on this issue. On the contrary, India and Pakistan’s nuclear tests have made it more unlikely that universality of the NPT (and the corresponding safeguards agreements) can be achieved in the near future. Bringing ‘countries under suspicion’31 into the strengthened safeguards regime will be one of the biggest challenges.

- Nuclear fissile material transferred from military use to peaceful nuclear activities should, as soon as practicable, be placed under Agency safeguards in the framework of the voluntary safeguards agreements in place with the nuclear-supplier States. Safeguards should be unilaterally applied upon the complete elimination of nuclear weapons has been achieved.

Again, the record since 1995 reveals a mixed picture. Bilateral efforts of the United States and Russia to secure fissile material from weapons programmes have been making some progress. Both countries are also consulting with the IAEA in the context of the Trilateral Initiative to put some of these materials under international safeguards. However, no nuclear weapon state to date has ratified an Additional Protocol. Nuclear weapon states have extensively used their numbers of nuclear activities as a reason to negotiate significant exemptions from the application of strengthened safeguards measures under their Additional Protocols.
RECOMMENDATIONS

The 2000 NPT Review Conference should conduct a thorough review of efforts to strengthen safeguards and should:

• clearly identify states in continued breach of their treaty obligations by not concluding full-scope safeguards agreements with the IAEA
• express regret that the DPRK is still in breach of safeguards obligations and that Iraq has not complied with the relevant UN Security Council Resolutions by disclosing the full scope of its nuclear activities
• welcome the agreement in May 1997 on the Model Additional Protocol and its adoption by the IAEA Board of Governors
• express disappointment at the small number of signatures and ratifications of Additional Protocols
• welcome the progress made by the IAEA in implementing the Strengthened Safeguards System
• express regret that India, Israel and Pakistan have not accepted additional safeguards.

The Review Conference should, in establishing clear benchmarks for strengthened safeguards for the next Review Conference in 2005:

• repeat the urgent call on NPT states parties that have not concluded full-scope safeguards agreements to do so as soon as possible
• call on NPT states parties that have not concluded, signed and ratified Additional Protocols to do so as soon as possible, so that Additional Protocol measures are applied in all states parties no later than 2005
• call on the DPRK to live up to its safeguards obligations and Iraq to comply with relevant UN Security Council resolutions
• pledge to give the IAEA the necessary political, technical and financial support
• call on NWS that have not yet done so to irreversibly place all their civilian nuclear activities under international safeguards
• encourage Russia and the United States to reach an agreement with the IAEA on the Trilateral Initiative as soon as possible
• call on India, Israel and Pakistan to undertake to cease production of fissile materials for nuclear weapons purposes and place all their civil nuclear activities under IAEA safeguards.

Dr Oliver Meier is VERTIC’s Arms Control and Disarmament Researcher.