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The Non-Proliferation Treaty: How to Remove the Residual Threats

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Preface

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Promoting informed participation by all States in disarmament efforts;

Assisting on-going negotiations on disarmament and continuing efforts being made to ensure greater international security at a progressively lower level of armaments, particularly nuclear armaments, by means of objective and factual studies and analyses;

Carrying out more in-depth, forward looking and long-term research on disarmament so as to provide a general insight to the problems involved, and stimulating new initiatives for new negotiations.

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UNIDIR takes no position on the views and conclusions expressed in these papers which are those of their authors. Nevertheless, UNIDIR considers that such papers merit publication and recommends them to the attention of its readers.

Professor Serge Sur
Deputy Director

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1. Introduction

Two major events have recently contributed to the rekindling of general interest in preventing a further spread of nuclear weapons: the discovery of a clandestine nuclear weapon development programme in Iraq and the dissolution of the Soviet Union, which has left nuclear arms deployed in several ex-Soviet republics.

To stem what is considered by most nations to be a dangerous tide, measures are being taken to reinforce the nuclear non-proliferation regime. This regime encompasses a myriad of restrictive rules as well as specialized institutions, both national and international, but the pivotal role belongs to the 1968 Treaty on the Non-Proliferation of Nuclear Weapons (NPT). Under this treaty--in force since 1970--the nuclear weapon states have undertaken not to transfer to any recipient whatsoever nuclear weapons or other nuclear explosive devices, and not in any way to assist, encourage, or induce any non-nuclear weapon state to manufacture or acquire such weapons or devices. The non-nuclear weapon states, on their part, have pledged themselves not to receive nuclear weapons or other nuclear explosive devices, as well as not to manufacture them or receive assistance in their manufacture.[1]

It is now widely recognized that the NPT suffers from several weaknesses, and that these weaknesses must be overcome to remove the residual threats to its survival. This paper discusses ways to achieve the sought goal.

2. Status of the implementation of the NPT

Parties

By September 1992 the NPT had attracted 150 states (almost 85 per cent of the UN membership)--a record number of adherents to an arms control agreement. This number includes all the five recognized nuclear weapon powers--China, France, the Russian Federation, the United Kingdom and the United States, as well as all highly developed, industrialized and militarily significant non-nuclear weapon states. There will certainly be further increases with the expected accession of the ex-Soviet republics as well as of some African states.

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[1] For a discussion of this and other essential elements of the Non-Proliferation Treaty, see, J. Goldblat, *Twenty Years of the Non-Proliferation Treaty: Implementation and Prospects*, International Peace Research Institute-PRIO, Oslo 1990.

In failing to declare all its nuclear activities and to submit them to international control, Iraq has committed a material breach of the Treaty.[2] As part of the coercive measures imposed by the United Nations in the aftermath of the Gulf War,[3] all the key elements of the Iraqi nuclear weapon development programme have been dismantled or destroyed.[4] Some uncertainties remain regarding the Iraqi uranium enrichment programme, but long-term international monitoring is envisaged to prevent this programme from being revived.

It has recently become known that the former regime of Romania had engaged in laboratory experiments which resulted in 1985 in the separation of approximately 100 milligrams of plutonium. This fact was not reported to the International Atomic Energy Agency (IAEA) as it should have been in compliance with the existing agreement between Romania and the Agency. The IAEA Board expressed its appreciation to the present Romanian government for having brought the matter to its attention.[5]

Hold-outs

The group of six non-nuclear weapon hold-outs from the NPT which had for many years conducted significant nuclear activities not subject to international control--Argentina, Brazil, India, Israel, Pakistan and South Africa--has been reduced by half. South Africa has joined the NPT and submitted its nuclear facilities to NPT verification measures. Argentina and Brazil have signed an agreement for the exclusively peaceful use of nuclear energy,[6] established a common system of accounting and control of nuclear material, and accepted the IAEA safeguards on all their nuclear activities to ensure non-production of nuclear explosive devices.[7] Although Argentina and Brazil have not yet joined the NPT or become full parties to the 1967 Treaty of Tlatelolco prohibiting nuclear weapons in Latin America, both countries have been removed from the list of states posing nuclear proliferation concerns.

However, the refusal by the three remaining nuclear threshold countries--India, Israel and Pakistan--to give up their nuclear weapon option continues to be a matter of concern. Israel, which is believed by many people to have secretly produced a sizable number of nuclear weapons, may

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[2] Iran, another party to the NPT, is suspected of having secret installations to enrich uranium and develop nuclear weapons, but so far no illicit nuclear activities could be identified there. (D.Albright and M. Hibbs, "Spotlight shifts to Iran" in *The Bulletin of the Atomic Scientists*, Vol.48, No.2, March 1992.)

[3] UN Security Council Resolution 687.

[4] *Arms Control Today*, Vol.22. No.4, May 1992.

[5] IAEA document MC-ROM Circ., 28 July 1992

[6] Conference on Disarmament document CD/1117

[7] IAEA document GOV/2557 and Conference on Disarmament document CD/1118.

provide an incentive for its neighbours to follow suit. Pakistan has admitted possessing all the components necessary to manufacture a nuclear bomb,[8] whereas India has already demonstrated its nuclear weapon capability by exploding in 1974 a nuclear device, and by test-firing in 1992 an intermediate-range ballistic missile with a payload capacity sufficient to carry a nuclear warhead.[9] Of these two countries, India appears to be particularly recalcitrant. Pakistan has declared its preparedness formally to forgo nuclear weapons and have its relevant facilities inspected, either under the NPT or within the framework of a South Asian nuclear weapon-free zone, the establishment of which has been repeatedly recommended by the UN General Assembly, but only if India does the same.[10] Considering that India's stand on nuclear matters is conditioned not only by the position of Pakistan but also by the policies of other states in the region, notably that of China, the prevention of nuclear proliferation lends itself to negotiation, and eventual settlement, within a geographical zone larger than South Asia, preferably with the participation of all the nuclear weapon powers.

Ex-Soviet republics

Fears that the dispersal of nuclear weapons in several former Soviet republics would lead to the emergence of new nuclear weapon powers were somewhat allayed when, in January 1992, the Russian Federation formally declared that it was a "legal successor of the USSR from the standpoint of responsibility for the fulfillment of international obligations", covering obligations "under bilateral and multilateral agreements in the field of arms limitation and disarmament".[11] These agreements include the NPT, under which Russia may not transfer control over nuclear weapons to any country "directly or indirectly".

The Russian statement, of which the international community had taken note, was not challenged by the non-Russian republics at the time it was made.[12] Nonetheless, in a Protocol signed in Lisbon on 23 May 1992, Byelarus, Kazakhstan and Ukraine, which have strategic nuclear weapons stationed on their territory (nearly thirty per cent of the total ex-Soviet inventory), were recognized

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[8] *International Herald Tribune*, 8-9 February 1992.

[9] *International Herald Tribune*, 30-31 May 1992.

[10] On 15 January 1992, CIA Director testified before the US Senate Committee on Governmental Operations that India or Pakistan may not yet have assembled or deployed nuclear bombs but may do so quickly. (J. B. Wolfsthal, "India and Pakistan Swap Lists" in *Arms Control Today*, Vol.22, No.1, January/February 1992.)

[11] Conference on Disarmament document CD/1123.

[12] In December 1991, at meetings in Alma Ata and Minsk, the members of the Commonwealth of Independent States agreed that nuclear weapons of the former Soviet Union would be maintained under "unified control" until they are removed from the non-Russian republics. (*PPNN Newsbrief*, Programme for Promoting Nuclear Non-Proliferation, Winter 1991/92.)

by the Russian Federation and the United States as "successor states" of the USSR "in connection" with the 1991 US-Soviet Strategic Arms Reduction Treaty (START).[13] Thus, the original bilateral START agreement has been converted into a multilateral one, and the three republics and the Russian Federation have undertaken to make arrangements "among themselves" for the implementation of its provisions.[14] This clause of the Protocol may give rise to disputes among the parties concerned over the pace of reductions. Ukraine has emphasized its right to take into account its national security interests in conducting the START elimination activities.

In separate letters addressed to the President of the United States, the leaders of Byelorus, Kazakhstan and Ukraine have undertaken to "guarantee" the elimination of all nuclear weapons located on their territories.[15] Byelarus has indicated that it expects the Russian Federation to receive the arms removed from its territory during the seven-year period provided for by START, but Kazakhstan and Ukraine have not specified where the elimination of the weapons stationed on their territory would take place. Moreover, Ukraine claims ownership of the materials contained in the weapons in question, and requires "reliable international control" (without specifying which states or organizations should exercise it) to ensure that the nuclear warhead components are not reused for weapon purposes or exported.

More straightforward is the pledge made under the Lisbon Protocol by Byelarus, Kazakhstan and Ukraine to accede to the NPT as non-nuclear weapon states "in the shortest possible time".[16] Indeed, the presence of nuclear weapons on a state's territory does not prevent that state from becoming a non-nuclear weapon party to the NPT if the weapons are controlled by a nuclear weapon state. However, no deadline has been set for accession. The fact that, in its letter to the US President, Kazakhstan, unlike Byelorus or Ukraine, has not included a commitment to a non-nuclear weapon status, may not augur well in the light of the equivocal statements previously made by its President. The necessary constitutional procedures may delay accessions to the NPT. There have been reports about domestic political opposition to eliminating strategic nuclear weapons in Ukraine.[17] Nonetheless, negotiations with the IAEA for the establishment of international controls over the nuclear activities of the former Soviet republics[18], as well as the drafting of nuclear export

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[13] Tactical nuclear weapons had been withdrawn from all ex-Soviet republics to Russia prior to the Lisbon meeting.

[14] *Daily Bulletin*, United States Mission in Geneva, SUF703, 05/24/92.

[15] Unlike the Protocol, the letters associated with it are not integral parts of the Treaty.

[16] Kazakhstan contends that it could have acceded to the NPT as a nuclear weapon state, because the first Soviet nuclear weapon test was conducted on its territory in 1949, that is, "prior to 1 January 1967"--an NPT condition for a state to qualify as a nuclear weapon state--and because nuclear weapons are now deployed on its territory. These arguments are untenable, because at the time of the first Soviet nuclear test Kazakhstan was not an independent state, and because nuclear weapons in Kazakhstan are not under the control of its government.

[17] *Los Angeles Times*, 29 April 1992.

[18] Ukraine alone operates over a dozen power reactors, several of which are continuously fueled and require intensive inspection.

control legislations, should start as soon as possible to avert the danger of unauthorized transfers of nuclear material or technology to countries pursuing nuclear weapon programmes. Early adoption of the international rules for the physical protection of nuclear material would be also desirable.

There is a lingering apprehension in Byelorus, Kazakhstan and Ukraine, that Russia may threaten their security and resort to nuclear blackmail in settling territorial or other disputes. However, all three republics are members of the United Nations and are therefore entitled to international protection in accordance with the UN Charter. Moreover, upon accession to the NPT they will be covered by the UN Security Council Resolution 255 which provides security assurances to countries attacked or threatened with nuclear weapons.

Failure by Byelorus, Kazakhstan or Ukraine to implement their denuclearization obligations could generate explosive antagonisms among the former Soviet republics and have disastrous effects for the NPT. The nuclear threshold countries would feel encouraged to cross the threshold and openly "go nuclear". The non-nuclear neighbours of Byelorus, Kazakhstan and Ukraine might feel threatened and decide to withdraw from the NPT in order to start their own nuclear weapon programmes. Alternatively, they might ask one or another nuclear weapon state to deploy a "nuclear umbrella" on their territory to deter a nuclear aggression by a potential adversary. The resulting arms races would reverse the present disarmament trend and carry new threats for international security. Such developments are conceivable but not very likely. The three ex-Soviet republics can hardly afford defying the overwhelming international opposition to a further spread of nuclear weapons.

3. Nuclear safeguards

Safeguards agreements

The role of safeguards under the NPT is to check compliance with the obligations undertaken by the parties. The original non-nuclear weapon parties to the NPT were under the obligation to conclude safeguards agreements with the IAEA and make them effective within 24 months from the entry into force of the Treaty. For states depositing their instruments of ratification or accession later than six months after the entry into force of the Treaty, safeguards agreements must be concluded and made effective within 18 months. This unqualified obligation is particularly important in the case of non-nuclear weapon countries whose nuclear activities make safeguards immediately applicable. A delay in concluding a safeguards agreement may give rise to suspicions

that the defaulting state is engaged in circumventing its NPT commitments. Indeed, when North Korea, party to the NPT since 1985, refused, under varying pretexts, first to negotiate, and then to accept comprehensive international safeguards over its nuclear activities--which are significant--its refusal was interpreted by many as an attempt to conceal a nuclear weapon development programme.[19] North Korea has finally concluded a safeguards agreement with the IAEA and has allowed international inspection on its territory. North Korean officials gave an assurance that IAEA inspectors would be allowed to visit any site or installation they wished to see, whether or not it was included in the initial report submitted to the Agency.[20] Nevertheless, doubts have remained as to whether North Korea had not taken advantage of the several years-long delay to produce and hide away plutonium for weapon purposes. Unfortunately, there is no provision in the NPT for a procedure to deal with cases of non-fulfillment by the parties of the obligation to conclude a safeguards agreement within the prescribed time-limit, or to resolve disputes over the contents of such an agreement.

Objective of safeguards

The objective of the NPT safeguards has been described as the timely detection of diversion of significant quantities of nuclear material from peaceful nuclear activities to the manufacture of nuclear weapons or of other nuclear explosive devices or for purposes unknown, and deterrence of diversion by the risk of early detection.[21]

On the advice of the IAEA Standing Advisory Group on Safeguards Implementation (SAGSI), "significant quantity" has been defined as the amount of material that a state would need to make its first nuclear explosive device, namely, 8 kg of plutonium, or 25 kg of uranium enriched to 20 per cent or more in uranium-235, or 8 kg of uranium-233.[22] These thresholds, which had been set years ago, could certainly be lowered. Some experts argue that with new, more advanced methods of assembling a nuclear explosive device, which are known to many, the amount of highly enriched uranium which Iraq possessed, and which was smaller than the threshold indicated above, could be made into more than one nuclear device with an explosive yield of many kilotons.[23] As regards

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[19] For a fuller discussion of the North Korean case, see B. Sanders, "North Korea, South Africa ready to tell all?" in *The Bulletin of the Atomic Scientists*, Vol 47, No.7, September 1991.

[20] *IAEA Newsbriefs*, Vol.7, No.3(55), June/July 1992.

[21] IAEA document INFCIRC/153, para 28.

[22] IAEA Safeguards, Aims, Limitations and Achievements, document IAEA/SG/INF.4, 1983.

[23] This and other conclusions of the UN Special Commission responsible for finding and eliminating Iraq's nuclear weapon capabilities, can be found in D. Albright and M. Hibbs, "Iraq's Nuclear Hide-And-Seek" in *The Bulletin of the Atomic Scientists*, Vol.47, No 7, September 1991.

"timely" detection, the IAEA relates it to the estimated time that would be needed to convert diverted material into components of a nuclear explosive device. This time, which would vary according to the nature of the material, has been set, again on the advice of SAGSI, at: 7-10 days for plutonium or highly enriched uranium in metallic form; 1-3 months for plutonium in irradiated fuel; and about one year for natural or low-enriched uranium.[24] Also in this case, the limits could be lowered, in particular with regard to direct-use nuclear material, that is, material that can be used for the manufacture of nuclear explosive components without transmutation or further enrichment. The suggested modifications would involve more rigorous and more frequent controls, which the IAEA may not be in a position to carry out with the modest means at present at its disposal.

The "risk of early detection", which should deter the potential diverter of nuclear material, is not directly quantifiable. The IAEA aims at achieving a 90-95 per cent probability of detecting the diversion of a significant quantity of nuclear material and a less than 5 per cent probability of sounding a false alarm. Reaching this goal may be an arduous task, considering that ever new countries acquire uranium enrichment and plutonium separation technologies. The introduction of laser uranium enrichment, which is easy to disguise, and of reprocessing plants, which can be remotely controlled, will make safeguarding even harder.

To reduce the danger inherent in the stockpiling by individual countries of large quantities of readily accessible weapon-usable material--difficult to safeguard because of measurement uncertainties[25]--the IAEA would have to intensify its efforts to establish a storage of excess plutonium or highly enriched uranium in conformity with its Statute. Attempts to set up an International Plutonium Storage, IPS, has so far proved unsuccessful, mainly because of the differences over the procedures for withdrawing the stored material, but the matter is pressing. The use in light water reactors of the so-called "mixed oxide" fuel, a mix of plutonium oxides with uranium oxides, is increasing, and the fast-breeder reactor programmes, requiring, as well as producing, large amounts of plutonium, continue in several countries in spite of reverses.[26] In addition to plutonium separated from nuclear power reactor fuel, hundreds of tons of weapon-grade fissionable material will be released as a result of the envisaged dismantlement of Russian and US nuclear weapons. All this will have to be safeguarded to prevent misuse.[27]

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[24] IAEA document IAEA/SG/INF 4, 1983.

[25] By the end of the 1990's the total inventory of separated plutonium in, or being held for, just four non-nuclear weapon states--Japan, Germany, Belgium and Switzerland--may be close to 100 tons. (L. Scheinman and D. Fischer, "Managing the Coming Glut of Nuclear Weapon Materials" in *Arms Control Today*, Vol.22, No.2, March 1992.)

[26] The French fast-breeder reactor, built in Creys-Malville in 1985, has so far been in operation for less than six months because of serious technical problems; it has been recently shut down. (*Journal de Genève et Gazette de Lausanne*, 20-21 June 1992 and 1 July 1992.)

[27] According to press reports, Russia appears to be tempted to use up plutonium from its dismantled nuclear warheads in specially constructed fast breeder reactors. (Le Monde, 28 July 1992.)

Design information

Safeguards under the NPT apply to fissionable materials, not to nuclear installations. Nevertheless, the parties are under the obligation to provide design information in respect of existing facilities. According to the decision taken by the IAEA Board of Governors in April 1992, the parties will now have to inform the Agency of their programmes for new nuclear facilities and activities, and for any modifications to existing facilities. This is to be done through the provision of preliminary design information as soon as the decision to construct, to authorize construction or to modify has been taken. Further information is to be provided as the designs are developed. This Board decision signifies a departure from the practice, followed hitherto, of providing design information only shortly before nuclear material subject to safeguards is moved into a nuclear facility. The IAEA will thus be able to determine the best way to apply safeguards and, in particular, where to install the surveillance instruments.

The Agency has the right to verify design information, and this right does not expire when a facility goes into operation. Even a closed-down facility may be visited by IAEA inspectors in order to prevent it from being reactivated and used for undeclared activities.[28]

Special inspections

According to the 1971 model NPT safeguards agreement, the IAEA may conduct special inspections in addition to routine and ad hoc inspections, if questions arise about the commitment of a party to the non-proliferation objectives of the NPT and, in particular, about the safeguards coverage of fissionable material. An inspection is considered special when it is either additional to the routine inspection, or when it involves access to information or locations in addition to the access specified in the model agreement for ad hoc and routine inspections.[29] The IAEA has never conducted inspections at locations or facilities other than those at which safeguarded material or equipment is located. By limiting its control activities to locations and facilities notified by the parties it has weakened the deterrence value of safeguards. Thus, Iraq was able to embark upon a substantial

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In his letter of 13 January 1992 to the President of the Russian Federation, the IAEA Director General said that if plutonium or enriched uranium were released from dismantled nuclear warheads, and if this nuclear material were transferred from the military to the civilian sector, the IAEA safeguards system could be used to verify the peaceful use or storage of the material. (*IAEA Press Release* PR 92/3)

[28] IAEA document GOV/2554/Attachment 2/Rev.2.

[29] IAEA document INFCIRC/153, paragraphs 73 and 77.

nuclear weapon programme and thwart the basic purpose of the NPT without being hampered by IAEA controls.

The draft final declaration considered (but not adopted) at the 1990 NPT Review Conference contained an appeal to the IAEA to take full advantage of its right to resort to special inspections. The IAEA was encouraged to engage in a study of the possible scope of such inspections and the procedures for setting them in motion.[30] In seeking to prevent a repetition of what happened in Iraq, the IAEA Board of Governors re-affirmed, in February 1992, the Agency's right to undertake special inspections, "when necessary and appropriate"[31] Nevertheless, the present formula for special inspections to detect clandestine nuclear activities is inadequate, because only the Agency--not the parties--may initiate visits to undeclared storage of nuclear materials and installations in countries suspected of violating safeguards agreements. To initiate special inspections the IAEA would have to be able to detect suspicious activities. It would need to establish its own intelligence-gathering service, but this is hardly feasible. Alternatively, national intelligence agencies would have to share with the IAEA *all* relevant information (as has been recently requested[32]), but this is not likely. Furthermore, the suspected state should not have the right to refuse a special inspection, a right that it appears to have under the model NPT safeguards agreement now in force.[33] A refusal depriving the Agency of the possibility to verify the absence of diversion of nuclear material to illicit purposes must be treated as a breach of the agreement, unless the non-complying party provides a convincing proof that the reason for its refusal is legitimate.

The text of the Chemical Weapons Convention, which has been elaborated by the Conference on Disarmament, contains considerably tighter provisions for inspections than the model NPT safeguards agreement. Under the CW Convention each party will have the right to request a challenge inspection of any facility in any place under the jurisdiction or control of another party for the purpose of clarifying and resolving questions of possible non-compliance. This inspection will be conducted without delay by an inspection team designated by the Director-General of the Organization for the Prohibition of Chemical Weapons. Each party will be obliged to permit a requested challenge inspection. It will also be entitled to protect sensitive installations and prevent

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[30] Fourth Review Conference of the Parties to the Treaty on the Non-Proliferation of Nuclear Weapons documents NPT/CONF.IV.

[31] IAEA Press Release 92/12.

[32] A suggestion to this effect was made by the IAEA Director General at the 1991 General Conference of the Agency. (IAEA document IAEA/PI/C.18E, November 1991.)

[33] Some experts argue that the relevant provision of the model NPT safeguards agreement should not be read as permitting a state to deny the IAEA access to information or locations necessary for the Agency to fulfil its obligations, but rather as a recognition of the necessity of working in co-operation with the inspected state. Nonetheless, an ambiguity on such an important issue must be avoided.

the disclosure of confidential information.[34] There is no reason why a similar procedure should not be applied to the safeguarding of nuclear activities.

Full-scope safeguards

Until recently the NPT clause, which sets forth the safeguards requirement, had been applied in a way that led to an absurd situation: the non-nuclear weapon parties to the NPT, those that have formally undertaken not to acquire nuclear weapons, were subject to safeguards covering all their nuclear activities, both current and future, whereas the nuclear activities of states refusing to join the NPT and keeping their nuclear weapon option open were controlled only partially, by safeguards applying exclusively to imported items--individual installations or material. A good part of the nuclear fuel cycle of non-parties could therefore remain unsafeguarded. For years, countries concerned about the dangers of nuclear proliferation inherent in this unjustified distinction between imported and domestic technology had been seeking to impose on non-parties full-scope safeguards, as extensive as NPT-type safeguards. Several suppliers, however, continued providing nuclear material and equipment to countries not accepting such safeguards. They may have thereby contributed to the recipients' capabilities to produce nuclear weapons. India and Pakistan have been the main beneficiaries of these policies.

At the 1990 NPT Review Conference it became apparent that those NPT parties, which in their dealings with non-NPT states had refrained from demanding the application of full-scope safeguards as a condition for nuclear supplies, were prepared to modify their position. In April 1992 the major suppliers adopted a common policy. They agreed that transfer to a non-nuclear weapon state of nuclear facilities, equipment, components, material and technology, as specified in the so-called trigger list,[35] should not be authorized unless that state had brought into force an agreement with the IAEA requiring the application of safeguards on all source and special fissionable material in its current and future peaceful nuclear activities.[36] Transfer to a non-nuclear weapon state without such a safeguards agreement should only be authorized in exceptional cases when it is deemed essential for the safe operation of existing facilities and if safeguards are applied to those facilities. The suppliers would inform each other and, if appropriate, hold consultations in the event they

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[34] Conference on Disarmament document CD/400 Rev.1.

[35] IAEA document INFCIRC/254.

[36] Source material means uranium containing the mixture of isotopes occurring in nature; uranium depleted in the isotope 235; thorium; any of the foregoing in the form of metal, alloy, chemical compound, or concentrate. Under the NPT-type safeguards, the term source material is interpreted as not applying to ore or ore residue, in particular to a concentrate called yellow cake. Special fissionable material means plutonium-239; uranium-233, uranium enriched in the isotopes 235 or 233; any material containing one or more of the foregoing (*IAEA Safeguards: Glossary, 1987 Edition*, IAEA, Vienna, Document IAEA/SG/INF/1 (Rev 1.).

intended to authorize or deny such transfer. Unfortunately, this policy will not apply to existing agreements and contracts.[37] Consistent, uncompromising denials of nuclear supplies by all exporters to all hold-outs from the NPT refusing to accept comprehensive international controls are needed to fortify the non-proliferation regime. It would remove safeguards from the field of commercial competition and put an end to complaints that industrialized countries accord priority to their economic interests over non-proliferation considerations.

Non-compliance

Even intensified safeguarding activities may not suffice to deter violations. NPT parties must be aware that detected violations will be met with resolute responses. Verification would lose its *raison d'être* if violators could get away with impunity.

According to the Statute of the IAEA, any non-compliance with the safeguards agreement, detected by inspectors, must be reported to the Director General and through him to the Board of Governors. The latter may call upon the non-complying state to redress the situation. In the event of failure of that state to take corrective action, the Board may direct curtailment or suspension of assistance and call for the return of materials and equipment. The Agency may also suspend a non-complying state from the exercise of the privileges and rights of membership.

The effectiveness of the above measures is doubtful. However, the IAEA Board has the duty to report non-compliance to the Security Council and the General Assembly of the United Nations. In their Declaration of 31 January 1992 the members of the Security Council qualified the proliferation of weapons of mass destruction as a threat to international peace and security. They committed themselves to working to prevent the spread of technology related to the research for or production of such weapons and to take appropriate action to that end. They emphasized, in particular, the role of fully effective IAEA safeguards and said that they would take appropriate measures in the case of any violations notified to them by the IAEA.[38] This statement, which has not been given the form of a Security Council resolution, cannot be taken to mean that in each case of proliferation the Council will resort to coercive measures authorized by Chapter VII of the UN Charter, but it may have a dissuasive effect. Irrespective of possible collective action against violators, individual parties to the NPT could resort to a variety of penalizing measures against states undermining the non-proliferation regime, including the termination of economic co-operation.

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[37] IAEA document INFCIRC/405.
[38] UN Security Council document S/23500.