THE IAEA'S ROLE IN NUCLEAR ARMS CONTROL: ITS EVOLUTION AND FUTURE PROSPECTS

by Roland Timerbaev and Susan Welsh

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The International Atomic Energy Agency's (IAEA's) potential role in nuclear arms control and nuclear disarmament has been under consideration, off and on, since the beginning of the negotiations that led to its establishment in 1957. The advent of the post-Cold War era, which has been accompanied by fundamental changes in the international geopolitical environment, has created a need for innovative approaches to the building of a new nuclear world order for the 21st century. This, in turn, requires that we reexamine the opportunities that the IAEA may present as an international mechanism capable of managing future nuclear arms control arrangements. As a more distant but no less compelling goal, the Agency should be considered as the likely organization for administering future schemes for international control over nuclear energy, if and when humankind becomes ready to embark on such an ambitious project.

THE IAEA STATUTE

Though the story of the IAEA, strictly speaking, starts with President Eisenhower's December 1953 "Atoms for Peace" proposal, some of the Agency's features stem from a much wider concept of the international control of atomic energy, which had been considered in the United Nations Atomic Energy Commission (UNAEC). In June 1946, the United States proposed that an International Atomic Development Authority (IADA) be created to manage all phases of the development and use of atomic energy, both military and potentially civilian. This proposal, known as the Baruch Plan, fell victim to the Cold War. However, some of the ideas and arguments exchanged in the UNAEC in connection with the proposed IADA--in particular those relating to international safeguards--were revisited during the negotiation of the IAEA Statute.

Although President Eisenhower had to settle for a more limited proposal than the Baruch Plan, he thought of the Atoms for Peace plan as a step towards a more far-reaching scheme of control over nuclear energy. In a letter to his brother Milton of December 11, 1953, three days after the Atoms for Peace proposal had been submitted by him to the United Nations, he wrote:

> It all grew out of my original basic idea that as long as the more extensive Baruch Plan had been rejected by the Soviets... possibly a gradual approach would open up new possibilities, new lines of study, and bring some hope to replace fear in the world.[1]

Responding to the U.S. plan for the establishment of a new international atomic agency, the Soviet Union proposed in 1954 that an

agreement on the non-use of nuclear weapons be considered on a priority basis. The Soviet Union reiterated this position at the Conference on the Statute held in New York from September 20 to October 26, 1956, arguing that:

> the development of international co-operation in the field of the peaceful utilization of atomic energy would be fuller and more effective if an international agreement could be reached on the unconditional prohibition of atomic and hydrogen weapons and their removal from the armaments of states.[2]

The Soviet Union, however, did not insist on making the conclusion of such an agreement a precondition for the establishment of the IAEA.

The Soviet government also sought to establish a close link between the new organization and the United Nations. It proposed that:

> this Agency be set up within the framework of the United Nations Organization and that it make reports on its activity to the Security Council and General Assembly of the UN. Moreover, the Statute must provide that problems arising with the Agency's activities and which fall within the competence of the Security Council be submitted by the Agency for solution to the Security Council as the organ charged with the primary responsibility for the maintenance of peace and international security.[3]

In explaining this proposal, Soviet representatives argued that nuclear energy uses could have serious implications for international peace and security and should therefore be addressed in the Security Council. Clearly, the proposal was also motivated by the Russians' interest in having veto power over the activities of the Agency.

During preliminary discussions, a basic relationship between the Agency and the United Nations was agreed upon. At the Conference on the Statute, the wording of the text was finalized as Article III.B.1:

> The Agency shall:
>
> 1. Conduct its activities in accordance with the purposes and principles of the United Nations to promote peace and international co-operation, and in conformity with policies of the United Nations furthering the establishment of safeguarded worldwide disarmament and in conformity with any international agreements entered into pursuant to such policies....[4]

This article would become the keystone of the legal basis for the Agency's role in disarmament, as will be seen below.

At the Working Level Meeting on the Draft Statute held in Washington, D.C., from February 27 to June 28, 1956, the Soviet Union proposed to include specific language on the relationship between the two organizations, requiring the Agency to submit reports on its activities to the U.N. General Assembly and to the Security Council. The Soviet Union also suggested that member states be allowed to refer to the Security Council any questions arising in connection with the Agency's activities that fall within the competence of the Security Council.[5]

Agreeing with the sense of this proposal, the United States tabled an amendment suggesting that the Agency should also submit reports to the U.N. Economic and Social Council and other U.N. organs when Agency activities fall within their competence. Both formulations were accepted by the Working Level Meeting and became the basis of the present text of Articles III.B.4 and 5 of the Statute:

> The Agency shall:
>
> 4. Submit reports on its activities annually to the General Assembly of the United Nations and, when appropriate, to the Security Council; if in connection with the activities of the Agency there would arise questions that are within the competence of the Security Council, the Agency shall notify the Security Council, as the organ bearing the main responsibility for the maintenance of peace and security, and may also take the measures open to it under this Statute, including those provided in paragraph C of Article XII;
>
> 5. Submit reports to the Economic and Social Council and other organs of the United Nations on the matters within the competence of these organs.

The statutory provision for a special relationship between the IAEA and the United Nations and its Security Council was more explicitly formulated later in the IAEA/U.N. Relationship Agreement concluded in 1957.[6] Under Article IX of this agreement, the Agency "shall co-operate with the Security Council by furnishing to it at its request such information and <u>assistance</u> as may be required in the exercise of its responsibility for the maintenance or restoration of international peace and security" (emphasis added). It was this stipulation that would later provide the legal basis for the close cooperation

between the Security Council's specially-created subsidiary body--the U.N. Special Commission on Iraq (UNSCOM)--and the IAEA regarding the destruction of Iraq's nuclear potential in the aftermath of the Gulf War.

In addition to the specific articles mentioned above, sufficient legal authority for the Agency's potential role in nuclear arms control can also be found in the more general provisions of the IAEA Statute. Article II mandates the Agency "to accelerate and enlarge the contribution of atomic energy to peace, health and prosperity throughout the world" and to ensure, so far as it is able, "that assistance provided by it or at its request or under its supervision or control is not used in such a way as to further any military purpose" (emphasis added). Article III.A.5 authorizes the Agency to "establish and administer safeguards designed to ensure that special fissionable and other materials, services, equipment, facilities and information made available by the Agency or at its request or under its supervision or control are not used in such a way as to further any military purpose" (emphasis added). In addition, this article authorizes the Agency to apply safeguards under any bilateral or multilateral arrangements at the request of the parties, thus providing a legal basis for the application of Agency safeguards to future disarmament agreements.

THE EVOLUTION OF THE IAEA'S ROLE IN PROMOTING NONPROLIFERATION AND DISARMAMENT

The IAEA's role in promoting nuclear nonproliferation and nuclear arms control evolved considerably during the Cold War, despite the tense political environment. In the beginning, states were reluctant to entrust the Agency with any tasks that would allow it to play a tangible political role, particularly in the area of arms control. However, as time went on, and as cooperation among the major powers began to improve, this reluctance gradually gave way to more pragmatic and constructive attitudes.

Early Decisions by the IAEA General Conference on Arms Control Issues

In the early years of the Agency, there was a controversy concerning its collaboration with the U.N. Scientific Committee on the Effects of Atomic Radiation (UNSCEAR). In 1960, the General Conference refused to take action on a proposed resolution referring specifically to Article III.B.1, which urged the suspension of nuclear testing, "on the grounds that the matter was under consideration in more appropriate fora."[7] Likewise, in 1961 the General Conference declined to act on a proposed resolution[8] "calling for the Agency's participation in international efforts to secure the prohibition of nuclear weapons."[9]

In several instances, however, the General Conference chose to adopt decisions related to disarmament. Thus, in 1962 the General Conference "requested the Director General to give full cooperation to the U.N. Secretary-General in keeping under review, pursuant to ECOSOC/RES 891(XXXIV), 'the basic aspects of economic and social consequences of disarmament.'"[10] In 1963, based on a joint initiative by the United Kingdom, the United States, and the Soviet Union,[11] the General Conference noted "with deep satisfaction" the conclusion of the Partial Test Ban Treaty. Additionally, the Seventh General Conference "requested the Director General to collaborate in the implementation of ECOSOC/RES/982(XXXVI)," which calls for the "conversion to peaceful needs of the resources released by disarmament."[12]

It is evident that during the Cold War there was no way of bringing to this "technical" Agency any matter that could have serious political implications, unless there was some measure of agreement among the major powers. As Paul Szasz has concluded, the IAEA may assume the function of assisting the United Nations in "evaluating proposed measures relating to disarmament" only "once the consensus of the world community has been established."[13]

The Non-Proliferation Treaty (NPT)

It is significant that the IAEA's General Conference in 1967 unanimously expressed its willingness to undertake the measures required to carry out its increasing responsibilities in connection with the NPT. This occurred while the Treaty was still being negotiated in the Eighteen-Nation Disarmament Committee, and before the U.N. General Assembly endorsed the NPT and opened it for signature in June 1968.

At the 1967 General Conference on September 26, Director General Sigvard Eklund:

> believed he was expressing the will of the Agency in saying that it was ready to perform the control function envisaged in the draft treaty.

> He was confident that its existing safeguards system would render it capable of doing so, and he believed it could justifiably claim that it was the organization best suited to perform that important task.[14]

The report of the General Conference plenary meeting on October 2, 1967, describes the president's concluding statement as saying that:

> such a task [safeguards arrangements for the NPT] would be quite in keeping with the Agency's objectives. Accordingly, he was sure the Conference would wish him to express the Agency's willingness to undertake the task and to make such preparations as might be necessary to enable it to discharge the wider responsibilities which might devolve upon it.[15]

After the NPT entered into force on April 2, 1970, the Agency's Board of Governors established the Safeguards Committee to advise the Board specifically about the IAEA's responsibilities regarding safeguards in connection with the Treaty.

The Director General, in his note of June 3, 1970, on "The Statute of the Agency and the Safeguards Required under the Treaty on the Non-Proliferation of Nuclear Weapons," concluded that:

> as [the] NPT may also be considered to constitute an agreement of the type referred to in Article III.B.1 of the Statute, it is evident that the Statute, as now worded, does provide the Agency with the legal authority to apply safeguards to achieve the objective foreseen in Article III.1 of [the] NPT, namely, to verify that there is no diversion of nuclear material to nuclear weapons or other nuclear devices, and to conclude the necessary agreements to that effect.[16]

The Director General also concluded that:

> the fact that under NPT safeguards the prohibition of the use of nuclear material is of a different nature or described in different terms from that in Agency Project Agreements (or other safeguards agreements concluded up to now by the Agency) does not mean that the Agency is debarred from applying safeguards to ensure against diversion of nuclear material to the use prohibited by NPT.[17]

The Board approved the model safeguards agreement for non-nuclear weapon states party to the NPT in 1971 as document INFCIRC/153, and, based on this model, the Agency has by now concluded over 100 safeguards agreements with non-nuclear weapon states party to the Treaty. In addition, all five nuclear weapon states party to the Treaty have concluded "voluntary offer" agreements with the Agency, thus placing part of their nuclear activities under IAEA safeguards.

Although the NPT does not explicitly provide for any controlling mechanism to verify its compliance, one can argue that Article III of the Treaty in fact establishes the Agency's right to perform certain controlling functions, such as monitoring the implementation of the provisions of this article. On this basis, the Agency has been conducting safeguards operations, and, on two occasions, the Board of Governors has notified the U.N. Security Council of non-compliance--by Iraq and the Democratic People's Republic of Korea (DPRK)--with safeguards agreements.

In 1971, in anticipation of the Agency's major role in stemming nuclear proliferation--an area of serious concern to the United Nations--the U.N. General Assembly requested the IAEA to include in its annual reports full information on the progress of its work on the application of safeguards in connection with the NPT.[18]

Regional Agreements and Nuclear-Weapon-Free Zones

Even before the conclusion of the NPT in 1968, the Agency's role as a monitoring mechanism on a regional level for nuclear-weapon-free zone agreements had been envisioned. Under the Tlatelolco Treaty for the Prohibition of Nuclear Weapons in Latin America, opened for signature on February 14, 1967, the contracting parties undertook to negotiate bilateral or multilateral agreements with the IAEA for the application of the Agency's safeguards to their nuclear activities.[19]

In addition to routine inspections, the Treaty of Tlatelolco provides for special inspections, the responsibility for which will in the future shift more heavily to the IAEA. After amendments to the treaty adopted by the General Conference of the Agency for the Prohibition of Nuclear Weapons in Latin America (OPANAL) in August 1992 enter into force, the IAEA will, under Article 16 of the Treaty, have "the power of carrying out special inspections in accordance with Article 12 and with the agreements referred to in Article 13 of this Treaty." This function of the Agency will again be based on Article III.B.1 of the Statute.[20] In accordance with similar arrangements, the IAEA has been a monitoring agency for the

South Pacific Nuclear-Free Zone established under the 1985 Rarotonga Treaty.[21]

Peaceful Nuclear Explosions

In the early 1970s, the Agency conducted several studies regarding international arrangements for peaceful nuclear explosions (PNEs), on the basis of Article V of the NPT. This article stipulates that "under appropriate international observation and through appropriate international procedures, potential benefits from any peaceful applications of nuclear explosions will be made available to non-nuclear-weapon States Party to the Treaty." The Director General convened a group of experts, who met to study the role that the Agency might perform in that connection. The group's report, which was considered by the Board of Governors, endorsed the view that the Agency was the appropriate international organization to carry out the observation activity called for by Article V of the NPT.[22] Since the 1970s, however, the Agency's work on PNEs has been gradually abandoned.

POST-COLD WAR OPPORTUNITIES AND CHALLENGES

The post-Cold War environment, characterized by the major nuclear powers' efforts to reduce their nuclear arsenals and to expand the international nuclear nonproliferation regime to a global level, has presented favorable conditions for the Agency's increased participation in nuclear arms control. At the same time, the heightened threat of nuclear proliferation in areas with regional security concerns necessitates more active IAEA participation in nonproliferation efforts and the strengthening of the nonproliferation system as a whole.

The need to reevaluate the nonproliferation regime became particularly evident in the aftermath of the Gulf War with the discovery of Iraq's well-developed and multipronged efforts to build nuclear weapons clandestinely. This revelation that an NPT signatory could build a large nuclear weapons program, despite international inspections, jolted the system out of its old ways of thinking and helped to reinforce the growing trend toward international cooperation. The limits of a system focused on detecting diversion of declared safeguarded material became apparent, as did the need to look at the overall nuclear picture in a country.

Thus, the world community began to recognize the need to fortify the Agency's role in arms control and to bring such tasks as dealing with clandestine nuclear programs into the international realm under the IAEA. As Lawrence Scheinman has correctly pointed out, Iraq was in a sense:

> an opportune event, for it directed attention to the limitations and weaknesses of the regime and of safeguards at the very outset of the post-Cold War world, and provided the justification for evaluating what would be required to sustain confidence in the regime under new political circumstances.[23]

Positive experience gained by the Agency in Iraq has helped contribute to the opening up of new areas for its more active involvement in the verification of disarmament. "Destruction, removal or rendering harmless" of Iraq's nuclear potential by UNSCOM and the IAEA, pursuant to U.N. Security Council Resolution 687 of April 3, 1992, and subsequent UNSC resolutions, in fact amounted to disarmament by "imposition." In order to carry out these activities in Iraq, the Agency set up an Action Team and obtained the outside expertise needed to deal with the new tasks posed by Security Council actions.[24]

In part due to the lessons learned in Iraq, a number of measures have been taken by the IAEA to improve its safeguards system. Both in 1992 and 1993, the Board of Governors gave its support to measures aimed at increasing the Agency's ability to detect undeclared nuclear activities in states with full-scope safeguards. These measures included confirmation of the Agency's right to conduct special inspections and to have increased access to information, including reports on relevant exports and imports and early provision of design information for new nuclear facilities to be constructed.

EXPANDING THE IAEA'S ROLE IN NUCLEAR ARMS CONTROL

Recent changes in the global political environment continue to provide new opportunities for the Agency's participation in the verification of bilateral and multilateral measures of nuclear arms control and disarmament. As noted above, the post-Cold War period has given rise to a number of pressing security concerns in the nuclear field. Growing stocks of plutonium and highly-enriched uranium (HEU) released from weapons in the disarmament process, as well as growing civilian stockpiles, heighten fears

of potential proliferation and diversion. Regional tensions, suppressed by the superpowers during the Cold War, raise fears that some of the newly independent states or other countries seeking regional power may attempt to gain nuclear status.

Hand-in-hand with these security concerns, an international consensus has been emerging on the need for new confidence-building measures or other arrangements to address the rising tide of nuclear threats. On a bilateral level, the United States and Russia have begun to address measures to minimize concerns over the possible misuse of fissile materials released in the dismantlement process. On a regional basis, work is underway to develop nuclear-weapon-free zones in areas of tension such as the Middle East and Africa. New proposals to consider similar regional arrangements to address security concerns in the Indian subcontinent have also been made. On a more global scale, the Conference on Disarmament (Geneva) has begun multilateral negotiations on a comprehensive test ban treaty and discussions on a ban on the production of fissile materials for weapons purposes. Additionally, major producers of plutonium and HEU have held several meetings in Vienna during the last few years to discuss further confidence-building measures regarding the production and surplus stockpiles of plutonium and HEU.

The urgency of these issues is heightened by the upcoming 1995 Review and Extension Conference for the NPT. As this conference approaches, the traditional nuclear weapon states feel the pressure to prove their commitment to nuclear disarmament in order to maintain and strengthen the effectiveness of the nonproliferation regime.

Verification of Disarmament

Motivated by the signing of the Intermediate-Range Nuclear Forces (INF) Treaty, IAEA Director General Hans Blix proposed a role for the IAEA in verifying disarmament agreements. On January 28, 1988, he addressed letters to General Secretary Gorbachev and President Reagan in which he *inter alia* wrote that:

> should you consider that our safeguards procedures might be of direct or indirect assistance in the verification of any future agreement, we would of course be ready to offer our services, in the way envisaged in our Statute....[25]

While Gorbachev welcomed "the willingness of the IAEA to offer its services and cooperation in this area," and Reagan promised in his reply to Hans Blix to "keep in mind your generous offer of assistance,"[26] no action was taken at that time by either the Soviet Union or the United States.

The first concrete step toward applying IAEA safeguards to nuclear materials released by the superpowers' disarmament was made in the fall of 1993 by the Clinton administration. In September 1993, the United States announced its plan to place excess HEU and plutonium from dismantled warheads under its voluntary safeguards agreement with the IAEA and urged other states to follow this example.[27]

In a joint statement issued by Presidents Clinton and Yeltsin on January 14, 1994, Russia agreed with the United States to explore the "possibility of putting a portion of fissionable materials under International Atomic Energy Agency safeguards." Following up on this agreement, Russia's Ministry of Atomic Energy and the U.S. Department of Energy announced on March 16, 1994, their "intention to host reciprocal inspections by the end of 1994 to facilities containing plutonium removed from nuclear weapons."[28] Experts from the two countries will test measures for verifying the amounts of plutonium and HEU without revealing confidential information on weapons design.[29] Such measures could then be utilized by the IAEA in expanding verification from a bilateral to an international level.

On March 23, 1994, the United States announced that as a first step it was subjecting seven tons of plutonium and 15 tons of HEU to IAEA inspection, and that it intends "eventually to submit all fissile material no longer needed for the U.S. defense programs" to inspection by the IAEA.[30]

There are a number of benefits to involving the IAEA in disarmament verification rather than relying solely on bilateral, reciprocal verification by the United States and Russia. First of all, international involvement, as represented by the IAEA, will address the concerns of other nations by ensuring that material withdrawn from weapons is not returned to military use and does not represent a proliferation threat. Second, IAEA involvement in safeguarding surplus fissile materials recovered from dismantled weapons will help convey to the rest of the world the commitment of the two major nuclear weapon states to nuclear disarmament. Third, any arrangements made to include the IAEA in disarmament verification could later expand to incorporate

other nuclear weapon states into this process. Such safeguards could be carried out under the existing safeguards system as part of the voluntary agreements between the nuclear weapon states and the Agency, or could be specified in more formal and binding agreements between those states and the Agency. Conceivably, if international arrangements regarding the management of fissile materials from weapons can be shown to be successful, this would encourage non-nuclear weapon states to place excess civilian stockpiles under such a regime.

A final and key benefit to Agency participation in this area is the boost it would give to the Agency's role in disarmament as foreseen in its Statute and stipulated in Article VI of the NPT. This benefit was not overlooked in a study on weapons plutonium issues released by the U.S. National Academy of Sciences in January 1994, which recommends that "the IAEA should be brought into the process [of monitoring fissile materials from dismantled weapons] expeditiously, in an expansion and strengthening of its nonproliferation role."[31]

Regarding the actual implementation of IAEA safeguards in the disarmament process, two main issues must be addressed. The first entails determining at what stage of dismantlement the IAEA should become involved, and what techniques should be used. Ideally, it would be beneficial, for purposes of reassuring the international community, to have the IAEA participate at the earliest stage possible. Therefore, appropriate techniques will need to be defined and developed to allow IAEA inspectors to monitor weapons components, while ensuring that no weapons design information is exposed. A second issue is the financing of such safeguards. Presumably, these costs would be picked up by the states involved.

Confidence-Building Measures Regarding Fissile Materials

As mentioned above, international arrangements pertaining to plutonium and HEU could involve the growing stocks in civilian programs in addition to excess fissile materials retired from military use. Civilian plutonium evokes the same security, proliferation, and safety concerns as plutonium recovered from weapons, as witnessed by the international furor over the 1992 shipment of plutonium from France to Japan. Although discussions regarding International Plutonium Storage were stalled in the 1980s, in recent years there have been new calls for some type of international arrangements to address concerns raised by ever-increasing fissile stockpiles in both civilian and military spheres.

The major plutonium and HEU users and producers have held a series of meetings, the first two in conjunction with the IAEA, to discuss possible additional confidence-building measures regarding plutonium and HEU. Discussions by these countries, as well as by outside academics, have raised the issue of a role for the IAEA in future confidence-building measures. Such a role for the IAEA would fit within its statutory functions. The Agency's Statute grants it broad authority to receive, store, manage, and control nuclear material, and to require the deposit with the Agency of excess fissile material recovered or produced as a by-product of legitimate uses in order to prevent stockpiling of such materials.[32] Thus, it is foreseeable that the Agency could undertake a role in any additional measures agreed upon in the future, whether on a unilateral, regional, or global level, or multilaterally among key users and producers.

Regardless of the scope of any such arrangements, the benefits of involving an international body are evident: increased assurance on a global scale and the possibility for expansion involving additional countries if the need arises. Likewise, IAEA activities in traditional safeguards could benefit by the increased transparency and pool of information gained by its participation in such measures.

The possibilities for additional confidence-building measures range from limited declarations of plutonium and HEU stocks to storage under Agency safeguards, either in states or in a central location, with specified arrangements for withdrawal of material for peaceful use. Other options for measures that address provisions for peaceful use and additional physical protection could involve peer reviews organized by the IAEA of physical security plans and of national peaceful use programs submitted by states; registration with the IAEA of all plutonium, HEU, and related facilities; agreements to reduce stockpiles; and the forswearing of the production of HEU and/or plutonium for peaceful uses, with only limited exceptions.

Since the IAEA has handled problems of plutonium and HEU storage in civilian inspections, it could foreseeably expand this role under any additional confidence-building measures adopted. More-

over, it is arguably the appropriate agency to handle similar problems of storing materials retired from military programs.[33]

Although no concrete measures have yet emerged from current dialogue on the subject, international interest remains high, creating the likelihood that at least some form of additional confidence-building measures regarding plutonium and HEU will gain broad international support in the near future. However, before any new measures arise, a number of issues need to be resolved, such as what measures will best reduce security and proliferation concerns among governments and the public, how such measures will be financed, what countries will be involved, and what legal framework will be used. At present, it does not appear likely that any new confidence-building measures will emerge in the shape of a formal binding international treaty. Rather, it is more probable that new measures will adopt a looser format that would be easier for states to amend as political conditions necessitate and that would expedite their conclusion. Any measures that could not be agreed upon globally could still be attractive for adoption by a group of suppliers or on a regional basis (e.g., forswearing all reprocessing and enrichment activities).

If states would agree to establish a worldwide inventory or register of all stocks of plutonium and HEU, as envisioned by a SIPRI study, such a register would entail the collection and publication of annual data related to plutonium and (most likely) HEU. Governments would be responsible for submitting information regarding fissile materials in their civilian nuclear programs, including materials in spent fuel and irradiated form, materials held abroad, and information on production facilities. For nuclear weapon states, information on fissile materials in military inventories and nuclear arsenals, on the disposition of material from dismantled weapons, and on military production facilities should also be submitted.[34]

Cut-off of Fissile Materials Production

As with the issue of International Plutonium Storage, the possibility of a cut-off of the production of fissile materials for weapons use, or other explosive purposes, has been raised for international consideration numerous times in the past. During the 1980s, such a cut-off was mainly discussed in terms of U.S.-Soviet bilateral agreements to limit the size of their nuclear arsenals.[35] However, in the 1990s, international support has grown for a more far-reaching arrangement. All non-nuclear weapon states party to the NPT have already agreed to a *de facto* cut-off of production of plutonium and HEU for weapons purposes. Thus, a cut-off would address arms control concerns regarding the nuclear weapon states and proliferation concerns in the so-called "threshold" states.

The IAEA would be a natural choice for verification of a cut-off. The safeguarding of enrichment and reprocessing plants, although a difficult task, is a problem to which much international work has already been devoted and a task which is already one of the IAEA's duties. The safeguarding of enrichment and reprocessing plants, as well as storage facilities for spent fuel, falls within the present safeguards system. On a number of occasions, Director General Blix has suggested that the IAEA could assist in planning and providing international verification for a cut-off of fissile material and plutonium production.[36]

President Clinton, in his September 27, 1993 speech to the United Nations, expressed the commitment of the United States to seek the conclusion of an international agreement banning the production of plutonium and HEU for use in weapons.[37] The U.S. delegation, in its statement in the U.N. General Assembly on November 1, 1993, emphasized that in regards to a cut-off, "verification through IAEA safeguards will, of course, be absolutely essential to the credibility of such a regime."[38] The IAEA was given further political support for the role it could play in relation to a cut-off by a U.N. General Assembly resolution adopted on December 16, 1993. The resolution, which *inter alia* recommended the negotiation of a "non-discriminatory, multilateral and internationally and effectively verifiable treaty banning the production of fissile material for nuclear weapons or other nuclear explosive devices," requested the IAEA "to provide assistance for examination of verification arrangements for such a treaty as required."[39]

At its 1994 session, the Conference on Disarmament began looking into how a cut-off should be negotiated and what its scope and structure might be. The Conference is also probing the views of states on how the treaty and its verification regime should be linked with the IAEA.[40]

A number of critical issues still remain to be addressed regarding a

cut-off, some of which would impact greatly on the IAEA, if it were to verify an eventual agreement. First, states must determine whether the entire fuel cycle or only sensitive facilities--such as reprocessing and enrichment plants--are to be safeguarded under a cut-off treaty. The decision will need to be based on the level of assurance provided by each option and the costs associated with the verification approach. As Director General Blix noted in his November 1, 1993 statement to the U.N. General Assembly:

> should IAEA safeguards be applied to the operation or dismantling of all installations capable of producing weapons-useable material, the added workload of verification--and the resources needed for it--would be significant.[41]

A second consideration is how to create a financially feasible verification system that is nondiscriminatory. If only sensitive facilities are safeguarded in the nuclear weapon states in order to keep the costs down, should the same standard apply to non-nuclear weapon states outside of the NPT, such as the threshold states? Third, the international nonproliferation community should discuss further whether creating a cut-off which would not "grandfather" previously produced HEU and plutonium would be perceived as establishing a *de facto* nuclear status for the undeclared nuclear weapon states, and whether this would be acceptable. In our view, this last issue should not be made an impediment to a cut-off, since its primary goal is to begin as soon as possible a process of comprehensive and nondiscriminatory nuclear de-emphasis leading eventually to nuclear disarmament.

A further issue is that of legal arrangements. As mentioned above, the INFCIRC/153-type safeguards agreements of the non-nuclear weapon states party to the NPT already provide a legal basis for verifying the absence of production of HEU and plutonium for military uses--both at declared and possible clandestine nuclear facilities. For the declared nuclear weapon states, existing voluntary agreements could be adapted or new arrangements made; other states without comprehensive safeguards would likewise need to be encompassed in new legal arrangements.[42] Presumably, these issues would be resolved for the most part in international negotiations of a cut-off treaty.

Nuclear-Weapon-Free Zones

Participation in bilateral and regional arrangements is an expanding part of the IAEA role in arms control. Bilateral and regional agreements supplement, rather than replace, IAEA safeguards and often provide the opportunity to adopt more extensive safeguards than under a standard NPT-type safeguards agreement.[43] Thus, regional agreements such as nuclear-weapon-free zones allow areas in conflict to address the specific security concerns of the states involved. As new bilateral and regional agreements are negotiated and endorsed by the U.N. General Assembly, new precedents for expanding the role of the IAEA are established, since Article III.B.1 of the Agency Statute calls for the IAEA to act in accordance with U.N. policies on disarmament and any related international agreements.

The Agency's involvement in regional arrangements started in the context of the Tlatelolco and Rarotonga nuclear-weapon-free zone treaties and has been continuously expanding. On March 4, 1994, the Quadripartite Safeguards Agreement among Argentina, Brazil, the Brazilian-Argentine Agency for Accounting and Control of Nuclear Materials (ABACC), and the IAEA came into force. Under this agreement, both reciprocal and international comprehensive safeguards will be applied to nuclear activities in Argentina and Brazil. The pact also sets a good example for future verification arrangements on the Korean peninsula. Such arrangements could be built on the basis of the Joint Declaration on a Non-Nuclear Korean Peninsula, signed by the two Koreas in February 1992, but not yet put into effect due to the continuing tensions resulting from North Korea's non-compliance with its safeguards agreement.

The Agency has been and continues to be involved in efforts aimed at the application of full-scope IAEA safeguards to all nuclear activities in the Middle East and at establishing a nuclear-weapon-free zone in the region. The 1993 General Conference adopted a resolution which reaffirmed:

> the urgent need for all States in the Middle East to forthwith accept the application of full-scope Agency safeguards to all their nuclear activities as an important confidence-building measure among all States in the region and as a step in enhancing peace and security in the context of the establishment of a nuclear-weapon-free zone.[44]

The resolution requested the Director General to continue consultations in order to facilitate the achievement of the above goals. It also called upon those states in the Middle East

which have not yet done so to accede to the NPT as soon as possible. These activities clearly fall within the provisions of Article III.B.1, since the U.N. General Assembly has repeatedly supported the concept of a nuclear-weapon-free zone in the Middle East.

In an October 1992 speech, Director General Blix noted that it is unlikely that NPT-type safeguards agreements would meet the needs of the Middle East, since the NPT does not explicitly prohibit production or possession of HEU or plutonium, but only requires that facilities and fissile material be declared and placed under safeguards. Any agreement in the region will most likely be more intrusive than NPT arrangements, although not as extensive as those provided by Security Council Resolution 687 for inspections in Iraq. Blix said the Indian subcontinent and the Korean peninsula would likewise require regionally tailored safeguards agreements.[45]

From the perspective of addressing broader international security concerns, the inclusion of IAEA inspection rights in nuclear-weapon-free zones is critical, as was underscored in an IAEA report written in preparation for a model agreement on verification agreements in the Middle East. For the region itself, IAEA involvement brings the prospect of benefitting from international expertise and financing and from the involvement of a neutral outside party.

Whereas nuclear-weapon-free zones in the Middle East and in South Asia, particularly, will most likely be long in the making due to the broader security concerns of these regions, there is a good chance that a nuclear-weapon-free zone in Africa will be in place in the near future. On December 16, 1993, the U.N. General Assembly requested the Secretary-General, in consultation with the Organization of African Unity (OAU), to take appropriate action to enable the U.N./OAU Group of Experts to "finalize the drafting of a treaty on a nuclear-weapon-free zone in Africa, and to submit the text of the treaty to the General Assembly at its forty-ninth session."[46] Recently, the group met twice--in Windhoek, Namibia, and in Addis Ababa, Ethiopia--in order to conclude negotiations on a treaty, and it is likely that the African Nuclear-Weapon-Free Zone Treaty will soon come into being. Throughout the preliminary meetings and the drafting process, the IAEA Secretariat worked with the U.N./OAU Group of Experts, allowing the African states to become more familiar with the potential role of the IAEA in ensuring adequate verification arrangements.

The draft treaty itself follows existing nuclear-weapon-free zone agreements in providing for the IAEA verification of compliance with treaty obligations. Under the proposed treaty, each party would undertake to conclude comprehensive safeguards agreements with the IAEA. The draft introduces a new feature, the "extraordinary" inspection. The African Commission on Nuclear Energy, to be established under the terms of the treaty, may request the Agency to conduct such an inspection if the Commission decides that there is sufficient substance in a complaint lodged by a party against another party. Extraordinary inspections will not prejudice the rights and powers of the Agency to carry out special inspections under comprehensive safeguards agreements.

It is logical that safeguards in Africa should be more far-reaching than in previously established nuclear-weapon-free zones, since it will be necessary to verify that South Africa, which had developed and later dismantled nuclear weapons, does not resuscitate its nuclear weapons program or related activities. The endorsement by the U.N. General Assembly of a new regional agreement that calls for such extraordinary inspections to be carried out by the Agency would set a new precedent and expand the IAEA's role in nuclear arms control verification.

Comprehensive Test Ban Treaty (CTBT)

In its first session in 1994, the Conference on Disarmament's Ad Hoc Committee on a Nuclear Test Ban began negotiating a Comprehensive Test Ban Treaty (CTBT). During earlier Conference on Disarmament discussions on a CTBT, the possibility of utilizing the IAEA as a verifying agency for such a treaty had been broached. A draft treaty formally submitted to the Conference by Sweden in June 1993, and later submitted in revised form in December 1993, developed these ideas further and assigned to the IAEA the verification tasks foreseen for a CTBT.

On February 16, 1994, the IAEA addressed the Test Ban Committee and presented it with a working paper on the relevance of the IAEA's mandate and capabilities to the task of verification of compliance with a CTBT. In sum, the Agency indicated that the tasks of CTBT verification would conform with its Stat-

ute; that the Agency has a broad base of technical and administrative experience and the capacity to develop the new capabilities that CTBT verification would require; and that the Agency, if provided with additional resources, would be capable of carrying out such verification tasks and could foreseeably reduce the costs and time needed for start-up due to its existing infrastructure and general technical expertise.

However, in March 1994, Australia submitted a draft CTBT, drawing heavily on the model of the Chemical Weapons Convention (CWC), that proposed that CTBT verification be carried out by a small organization co-located with the IAEA in Vienna. Such an organization could "contract out certain technical and administrative and conference support tasks to the IAEA."[47] In explaining this model, Australia argued that involving the IAEA on a contract basis would incorporate the advantages of using the Agency's expertise while avoiding legal, political, and financial problems that could be involved in allocating the treaty verification to the IAEA.

Regardless of what organization is selected, the verification function of a CTBT is likely to include a number of central tasks. The exact nature of these tasks will depend on the negotiations, which will also need to determine what would be done by the international organization and what would be the responsibility of the parties to a CTBT. Most experts agree that seismological monitoring should be the basis of CTBT verification, to be supplemented possibly by a number of other monitoring techniques, such as collecting radionuclide samples in the atmosphere, hydroacoustics, satellite surveillance, and on-site inspections in areas where a test is suspected to have taken place. The verification agency would be responsible for collecting, analyzing (to an extent determined in negotiations), and disseminating to states parties to the treaty data collected by these monitoring techniques. The verification organization would also need to work with states parties to clarify any suspected violation of a CTBT, and could be required to refer cases to the U.N. Security Council if further action is needed.

While it appears doubtful at this point that negotiations will result in a CTBT that will rely on the IAEA as its main implementing body, there could be a number of benefits to assigning this function to the Agency that should be considered further. If an autonomous organ within the IAEA were set up to handle CTBT verification, it could draw on IAEA experience and infrastructure, and arguably could take less time and money to put in place than an entirely new organization. As an autonomous part of the IAEA, a CTBT organ would fall outside the regular budget, which is faced with zero growth.

The Board of Governors could provide a sound body to oversee the functions under a CTBT, since it represents a regionally balanced and technically and politically adept forum for decisionmaking. However, if signatories to the treaty were opposed to governance by a body other than the parties to the treaty, they could create a separate governing organ. For the NPT, however, it was not deemed necessary to set up such a body, and non-NPT members of the Board of Governors take part in Board actions relating to safeguards under the NPT.

Although placing such additional responsibility upon the IAEA would require substantial changes in its administration and, especially, its finances, this new role would be consistent with the Agency's general goal of seeking to prevent the use of atomic energy for military purposes. If the United Nations were to sanction a CTBT, any tasks to be performed by the Agency would be in conformity with Article III.B.1 of its Statute.

It could be argued that, unlike the safeguarding of the NPT, the verification of a CTBT, though related to the field of atomic energy, would be a completely different exercise requiring new expertise, additional personnel, finances, etc. The Agency, however, has already proven its ability to take on and successfully carry out additional tasks, as in the case of the destruction of Iraq's nuclear weapons program, which go well beyond its regular responsibilities.

There can hardly be any doubt that with additional resources and support, the IAEA would be able to discharge new challenging duties as the verification agency for a CTBT. Such a solution would save the world community from the need to set up yet another international organization with a large bureaucracy.

International Control of Atomic Energy

Ideally, the quest for a more stable world nuclear order, made possible by the recent dramatic breakthrough in the decades-long efforts to harness the nuclear arms race, should eventually lead to some form of international control of nuclear energy. Today, the likelihood of a gradual movement toward

international control seems more credible than ever before. Though any precipitate steps in this direction would hardly be prudent, governments should give serious thought to this possibility. This becomes even more important now, since at the 1995 NPT Review and Extension Conference non-nuclear weapon states will expect from nuclear weapon states a clear indication of their intent to live up to their nuclear disarmament commitments under Article VI of the NPT. The disarmament process would inevitably require further expansion of international verification measures, covering not only materials and facilities withdrawn from military use, but also those in civilian programs. Such a process could then be further expanded to create a more comprehensive and institutionalized control of nuclear energy.

Any future plans aimed at establishing broader control over nuclear energy should be built on and around a dependable, effective international organization. Instead of establishing a new, costly international mechanism for this purpose one should consider building up the existing one--the IAEA. The Agency was able to overcome serious credibility problems posed by unexpected revelations in Iraq and to strengthen its capability of monitoring the nuclear nonproliferation regime. It thus demonstrated its aptitude for change and institutional learning. New responsibilities with which the Agency may be vested under future cut-off and, possibly, CTBT agreements would enhance its expertise and its preparedness to assume more demanding tasks.

CONCLUSIONS

The founders of the IAEA were wise enough to foresee a potential role for the Agency in nuclear arms control and nuclear disarmament when they inscribed into the Statute that the IAEA shall function in conformity with the United Nations' policy of furthering "safeguarded worldwide disarmament" *and* established an appropriate relationship between the two organizations.

The IAEA, originally established as a world body to promote peaceful uses of atomic energy under appropriate international safeguards, has over the years expanded its involvement in international efforts, on both global and regional levels, aimed at preventing the spread of nuclear weapons. With the conclusion of the NPT and the establishment of the IAEA as its monitoring agency, the IAEA became the principal guardian of the international nuclear nonproliferation regime. In addition, the Agency acquired new responsibilities under the Tlatelolco and Rarotonga Treaties, and is expected to perform similar functions in the framework of nuclear-weapon-free zones in Africa and other regions when such zones are established.

In the post-Cold War era, the world community is faced with new challenges in the field of nuclear arms control and nuclear nonproliferation that will require increasing emphasis on multilateral approaches and multilateral mechanisms. The IAEA, both on statutory grounds and for many practical reasons, is well-suited to assume additional challenging responsibilities for the verification of nuclear arms control and disarmament agreements.

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[1] Quoted in McGeorge Bundy, Danger and Survival (New York: Random House, 1988), p.290. In its practical activity, the Eisenhower administration, however, gave preference to forming a West European regional nuclear agency, Euratom, and to sharing the benefits of the peaceful atom, rather than to creating a world body for preventing the spread of nuclear weapons. (See George Bunn, Arms Control by Committee: Managing Negotiations with the Russians (Stanford, Calif.: Stanford University Press, 1992), pp. 86-87.)

[2] IAEA Conference on the Statute document IAEA/CS/OR.3, p. 26.

[3] "Soviet Aide Memoire to the United States," October 1, 1955, cited in Roland Timerbaev, Mirnyi Atom na Mezhdunarodnoi Arene (Moscow, 1969), pp. 13-14.

[4] Art. III.B.1 of the draft statute submitted to the Working Level Meeting on the Draft Statute of the International Atomic Energy Agency (Washington, D.C., February 27 - June 28, 1956) had read: "conduct its activities in conformity with policies of the United Nations to further the establishment of safeguarded, worldwide disarmament and in conformity with any international agreements entered into pursuant to such policies. At the Conference on the Statute this text was amended at the request of a group of non-aligned countries by including a phrase to the effect that the Agency shall act "in accordance with the purposes and principles of the United Nations to promote peace and international co-operation."

[5] Working Level Meeting on the Draft Statute of the IAEA, USSR Doc. 2 (Add. 2), February 28, 1956.

[6] IAEA/UN Relationship Agreement, IAEA document INFCIRC/11, 1957.

[7] The proposed resolution is contained in IAEA documents GC(III)/89 and Addendum 1, and GC(III)/93/Rev.1; the Conference's explanation of its refusal to act on the matter is spelled out in IAEA documents GC(III)/107 and GC(III)/OR.35, paras. 31-32. These documents are cited in Paul C. Szasz, The Law and the Practice of the International Atomic Energy Agency, Legal Series No.7 (Vienna: IAEA, 1970), p. 358.

[8] IAEA document GC(IV)/131, cited in Szasz, op. cit., p.358.

[9] Szasz, op. cit., in reference to IAEA document GC(IV)DEC/11.

[10] Szasz, op. cit., p.359, quoting from IAEA resolution GC(VI)RES/130.

[11] IAEA document GC(VII)/250 in Szasz, op. cit., p. 359.

[12] IAEA resolution GC(VII)RES/160, quoted by Szasz, op. cit., p. 359.

[13] Szasz, op. cit., p. 358.

[14] Records of the Eleventh Regular Session (26 September- 2 October 1976) One Hundred and Eleventh Plenary Meeting, IAEA document GC(XI)/OR.111, p. 4, February 8, 1968.

[15] Records of the Eleventh Regular Session (26 September- 2 October 1976) One Hundred and Eleventh Plenary Meeting, IAEA document

GC(XI)/OR.118, p. 3, February 13, 1968.

[16] The Statute of the Agency and the Safeguards Agreements Required Under the Treaty on the Non-Proliferation of Nuclear Weapons, Note by the Director General, IAEA document GOV/COM.22/4, June 3, 1970.

[17] Ibid.

[18] U.N.General Assembly resolution A/2825 (XXVI).

[19] Article 13 of the Tlatelolco Treaty was endorsed by the U.N. General Assembly, and although the relevant U.N. resolution was not explicitly addressed to the Agency, it does appear to express, as was rightly noted by Paul Szasz, a policy to which the Agency is to conform pursuant to Statute Article III.B.1. Szasz, op. cit., p. 545.

[20] The U.N. General Assembly welcomed "the consolidation of the regime of military denuclearization" established by the Treaty of Tlatelolco, "including the adoption by acclamation on 26 August 1992 of the amendments to it." (Resolution 47/61 of December 9, 1992). This change in the nuclear arms control regime in Latin America, as endorsed by the General Assembly, has thus become part of the U.N. policy on disarmament which under Article III.B.1 of the IAEA Statute is to be pursued by the Agency in carrying out its functions.

[21] Annex 2 to the Rarotonga Treaty, "IAEA Safeguards."

[22] IAEA document GOV/OR.435, paragraph 63.

[23] Lawrence Scheinman, "Assuring the Nuclear Non-Proliferation Safeguards System," Occasional Paper, Atlantic Council of the U.S., October 1992, p. 41.

[24] In South Africa, the Agency gained further experience in verifying the complete dismantlement of a country's nuclear weapons program, in this case in response to an invitation from South Africa.

[25] Exchange of Letters Between the Director General and the General Secretary of the Central Committee of the Communist Party of the Soviet Union and the President of the United States of America, IAEA document GOV/INF/549, April 8, 1988.

[26] Ibid.

[27] The White House, Office of the Press Secretary, Press Release, "Fact Sheet on U.S. Excess Fissile Materials and Safeguards," September 11, 1993.

[28] Joint Statement on Inspection of Facilities Containing Fissile Materials Removed from Nuclear Weapons, U.S. Department of Energy and Russian Ministry of Atomic Energy (Minatom), March 16, 1994.

[29] Ibid. and Michael R. Gordon, "U.S. Backs Checks of Atomic Surplus," New York Times, March 24, 1994.

[30] Gordon, op. cit.

[31] Committee on International Security and Arms Control, National Academy of Sciences, Management and Disposition of Excess Weapons Plutonium (Washington, D.C.: National Academy of Sciences, 1994), p. 11.

[32] IAEA Statute, Article III.B.2, Article IX.A and H, Article XII.A.5 and 6. This and other issues pertaining to confidence-building measures regarding plutonium and HEU have been addressed by the IAEA in its Non-paper On International Arrangements for Plutonium and Highly Enriched Uranium: A Discussion Paper on Additional Confidence Building Measures in Relation to Plutonium and Highly Enriched Uranium (Vienna: IAEA, November 1993).

[33] Lawrence Scheinman and David A. Fischer, "Managing the Coming Glut of Nuclear Weapons Materials," Arms Control Today (March 1992), p. 9.

[34] David Albright, Frans Berkhout and William Walker, World Inventory of Plutonium and HEU, 1992, SIPRI, (Oxford: Oxford University Press, 1993), pp. 213-14.

[35] Warren H. Donnelly and Lawrence Scheinman, "New Concepts in Nuclear Arms Control: Verified Cutoff & Verified Disposal," Programme for Promoting Nuclear Nonproliferation, Occasional Paper No. 5, February 1990, p. 4.

[36] Hans Blix, Statement to the 37th Session of the General Conference of the IAEA 27 September 1993; Statement to the 48th Session of the U.N. General Assembly 1 November 1993, IAEA document IAEA/PI/C2OE, pp. 23, 36-37.

[37] Remarks of President William J. Clinton, Address to the 48th UN General Assembly, September 27, 1993, p. 10.

[38] U.S. Mission to the United Nations, Press Release USUN 178-(93), "Statement by Ambassador Karl F. Inderfurth, United States Alternate Representative to the 48th Session of the United Nations General Assembly, in Plenary, on Agenda Item #14, the Report of the International Atomic Energy Agency, November 1, 1993," p. 3.

[39] U.N. General Assembly resolution A/RES/48/75, December 16, 1993.

[40] Test Ban and Fissile Material Cutoff Treaties Still in 'Pre-negotiating mode' in the Conference on Disarmament, Geneva Conference on Disarmament Monitoring Project, Report No. 3, March 11, 1994, pp. 2-3.

[41] Blix, op. cit., p. 23.

[42] Mohammed ElBaradei, Assistant Director General of the IAEA, "Expanded Verification Tasks for the IAEA?", paper delivered to the IAEA Seminar on "The Current and Future Safeguards Role of the IAEA: Challenges and Opportunities," Vienna, January 28, 1994.

[43] Scheinman, op. cit., p. 36.

[44] IAEA resolution GC(XXXVII)/RES/627, October 1, 1993.

[45] Hans Blix, "Lessons of Iraq," opening address delivered to "Proliferation in the 1990s," Aspen Strategy Group Conference, sponsored by the European Strategy Group, Rome, October 28, 1992.

[46] U.N. General Assembly Resolution A/RES/48/86.

[47] Comprehensive Test Ban Treaty: Australian Resource Paper on Draft Treaty Elements, Explanatory Notes, Conference on Disarmament document CD/NTB/WP.XX, March 30, 1994, p. 3.