

Report

NPT Export Controls and the Zangger Committee

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As required by Art. VIII.3, the Review Conference of the Treaty on the Non-Proliferation of Nuclear Weapons (NPT) was held from April 24 to May 19, 2000, “to review the operation of this Treaty” since the last conference in 1995 “with a view to assuring that the purposes of the Preamble and the provisions of the Treaty are being realized.”¹ At the NPT Review and Extension Conference in 1995 (NPTREC), the parties decided without a vote to extend the Treaty indefinitely. As part of the indefinite extension package, they adopted decisions on “Strengthening the Review Process for the Treaty” and on “Principles and Objectives for Nuclear Non-Proliferation and Disarmament.”²

The focus of this viewpoint is on export control requirements in the framework of the NPT. It describes the principal obligations in this area that apply to each Treaty member. It tries to explain what the Treaty demands and what new conclusions should be drawn from the decisions taken by the NPTREC. It also discusses the purpose and the work of the Zangger Committee, and why the results of its work should be important for all members of the NPT. During the 2000 review conference, discussions were held on better cooperation in export controls

and coordination of export policies among all interested states parties, and how the Zangger Committee could help increase cooperation between suppliers and recipients. A new and increasingly important element in these considerations is the role the International Atomic Energy Agency (IAEA) should play in the framework of NPT export controls. In particular, IAEA information-collection activities could provide a way to reduce the burdens that export controls currently place on individual states.

THE ROLE OF EXPORT CONTROLS IN THE NPT FRAMEWORK

The principal goal of the NPT, specified in Articles I and II, is to prevent the spread of nuclear weapons. The NPT prohibits nuclear weapon states (NWS) from supplying nuclear weapons to or contributing to weapons programs in non-nuclear weapon states (NNWS). It also prohibits NNWS from acquiring or developing nuclear weapons on their own. Article III contains tools to ascertain whether nuclear material and equipment have been diverted “from peaceful purposes to nuclear weapons or other nuclear explosive devices” in a NNWS. Article III provides two tools to meet these objectives:

safeguards for verification of activities inside states (Art. III.1) and *export controls* for transfers between states (Art. III.2).

Article III.1 states that each NNWS party accepts safeguards, which are based on a system developed in 1970 by the IAEA. The IAEA verification activities (e.g., reporting and inspections) relate to all nuclear material in all peaceful nuclear activities within the territory of each state, under its jurisdiction, or carried out under its control anywhere.

This safeguards system, because of its scope, is called the “Full Scope (or Comprehensive) Safeguards System” (FSSG).³ A recent expansion of the FSSG through an Additional Protocol⁴ will be discussed below.

Article III.2 contains the provisions for nuclear export controls; it specifies that parties not transfer to NNWS nuclear material, as well as certain equipment and non-nuclear materials, unless the nuclear material shall be subject to the required safeguards. This section raises two important questions: (1) what are the criteria for applying export controls, and (2) what specific equipment and materials should be submitted to export controls?

The first question can be answered rather easily: All criteria and conditions for supply are contained in the NPT. NPT parties are permitted to export to NNWS under three conditions: (1) the transferred items will be used for peaceful purposes only; (2) the recipient state has a safeguards agreement with the IAEA in place; and (3) in case of a re-transfer to a third country, the re-exporting state has to assure itself that the criteria of the NPT are applied in the recipient country.

The second question—what equipment and materials shall be submitted to export controls—cannot be answered as easily as the first question. There is possible uncertainty in what the relevant treaty language in this area means, and therefore in what items fall within its scope. NPT Article III.2 requires states parties not to provide a NNWS with “equipment or material especially designed or prepared for the processing, use or production of special fissionable material” unless the recipient has NPT safeguards in place. However, the Treaty does not define what constitutes such equipment or material.

THE PURPOSE AND PROCEDURES OF THE ZANGGER COMMITTEE

For this reason, in March 1971, after the NPT’s entry into force, suppliers or potential suppliers of nuclear material and equipment came together to discuss and clarify the technical implications and requirements of NPT export controls. This meeting was the origin of the Zangger Committee, named after the first chairman, Professor Claude Zangger from Switzerland.

The supplier countries formed the Committee to decide how to interpret the NPT’s rather general export control obligations. They established a list of goods, called the “Trigger List” (any export of such items “triggers” safeguards), and defined procedures and conditions under which nuclear exports could be licensed. The Zangger Committee’s “Understandings” were published in September 1974 as IAEA document INFCIRC/209,⁵ and since then the Trigger List has been amended several times.

The Zangger Committee⁶ meets regularly in spring and autumn every year. Its agenda includes matters that either deal with amendments to the Understandings (the Trigger List and its procedures) or with organizational questions. A lot of work is done intersessionally, and therefore two formal meetings suffice to keep all members up-to-date and to make any necessary decisions.

The Committee does not decide “ex cathedra” what the export control requirements of the NPT should be. Instead, its members—NPT parties who are major suppliers confronted regularly with the question of how to interpret Art. III.2 obligations—meet to negotiate what minimum requirements should be applied. They seek to harmonize their understandings, aiming at the widest possible membership, to try to prevent commercial transactions from weakening nonproliferation objectives.

The Committee’s Understandings are published in two separate memoranda. Each memorandum defines and provides for export controls on a category of commodities described in Article III.2. Memorandum A covers source and special fissionable material, while Memorandum B covers equipment and material specifically designed or prepared for the processing, use, or production of special fissionable material.⁷

Attached to the Trigger List is an annex “clarifying” or defining in some detail the equipment and material listed in Memorandum B. The Committee is regularly engaged in considering possible revisions to the Trig-

ger List to cover new developments in technology, and the original annex has thus become increasingly detailed. To date, the Committee has made eight clarifications; most recently, in June 1999, it added a chapter on conversion equipment for uranium and plutonium. The consolidated Understandings were published by the IAEA in March 2000, as document INFCIRC 209/Rev.2.⁸

To fulfill the requirements of NPT Article III.2, the Zangger Committee Understandings contain three basic *conditions of supply* for these items:

1. the nuclear material either directly transferred, or produced, processed, or used in the facility for which the transferred item is intended, shall not be diverted to nuclear weapons or other nuclear explosive devices;
2. such nuclear material, as well as transferred equipment and non-nuclear material, shall be subject to safeguards under an agreement with the IAEA; and
3. the nuclear material, equipment, and non-nuclear material shall not be re-exported to a third state unless the recipient state accepts the same conditions that were placed on the re-exporting state.

Individual member states of the Committee formally accept these Understandings by exchanging notes among themselves. Their unilateral declarations confirm that the Understandings will be made effective through their domestic export control legislation.

In parallel with this procedure, member states write identical letters to the IAEA Director General (DG) informing him of their decisions to act in conformity with the conditions set out in the Understandings. These letters also ask the DG to communicate their decision to all IAEA member states.

Relation to the Nuclear Suppliers Group

The Nuclear Suppliers Group⁹ (NSG) shares many of the Zangger Committee's goals. The NSG grew out of the "London Group," which was formed shortly after the Indian nuclear explosion in 1974 to try to prevent further nuclear proliferation. At that time, a group of countries, some of which were not members of the NPT, met to consider whether further criteria and measures for export controls should be introduced. In 1977, these countries agreed on the so-called "London Guidelines,"¹⁰ a set of criteria that went beyond the Understandings of the Zangger Committee; its additions to the Trigger List were later also adopted by the Zangger Committee. The London Group did not meet anymore after the publication of

these guidelines and thus left to the Zangger Committee further improvements to the Trigger List.

In 1992, after the Gulf War, when the world community found out that Iraq, an NPT member, was developing a clandestine nuclear weapons program, supplier states revitalized the London Group as the NSG, and added to the existing regime (now referred to as Part 1, containing the NSG's Trigger List) a second part, the "nuclear-related dual-use regime." This regime intended to introduce export controls on items used in conventional industries that can also be used for nuclear purposes. This Part 2 was the main reason why the NSG was created. As the "dual-use regime" did not have its legal foundation in the NPT, it has been the target of criticism since its inception, particularly from "non-aligned movement" (NAM) countries.

As Part 1 of the NSG Guidelines is similar to the Zangger Committee's Trigger List and as many states are members of both groups, there has been a strong interest in harmonizing the two practically identical lists. The Zangger Committee and NSG cooperate well. To avoid duplication of work, the NSG Plenary in Buenos Aires in 1996 clarified the question of cooperation: it concluded that the Zangger Committee should continue to deal with the Trigger List and the NSG subsequently should harmonize the results with its Part 1 list. The NSG is currently reviewing its structure and implementation procedures with the aim of reassessing its criteria and streamlining its performance.

THE NPT REVIEW PROCESS AND THE ZANGGER COMMITTEE

Nuclear export controls have been playing an ever-increasing role in NPT review conferences since 1975. Since the time of the "North-South-dialogue" at the end of the 1970s, there have been suspicions and allegations in relation to the function of export controls. While suppliers considered them necessary as an important contribution to international security, recipient countries—in particular NAM countries—blamed the suppliers who adhered to them for effectively depriving developing countries of their right to develop.

In the course of the NPT review conferences, the Zangger Committee won increasing recognition; eventually all states were urged to adopt the Committee's requirements for any nuclear cooperation with non-NPT non-nuclear weapon states. During the 1990 and 1995

conferences, the Zangger Committee was mentioned by name. While the 1990 conference did not adopt a final declaration, its Main Committee II observed that Zangger Committee members had met regularly to coordinate implementation of Article III.2 and had adopted nuclear supply requirements and a Trigger List. It recommended that this list be reviewed periodically to take into account advances in technology and changes in procurement practices. Main Committee II also urged all states to adopt the Zangger Committee's requirements for any nuclear cooperation with a non-NPT non-nuclear weapon state.¹¹

The NPTREC, due to its special focus on the Treaty's extension, did not adopt a final declaration. But as at previous conferences, its Main Committee II dealt extensively with export controls. In this context, it also discussed the activities of the Zangger Committee in interpreting Article III.2, of the Treaty. It noted that a number of state suppliers had formed an informal group known as the Zangger Committee and had adopted certain Understandings. It invited states to consider applying these Understandings and recommended that the list of items and the procedures for implementation be reviewed from time to time. It was further noted that the application by all states of the Understandings of the Zangger Committee would contribute to the strengthening of the nonproliferation regime. At the same time it called for international consultations among all interested states.¹²

The 2000 NPT Review Conference again emphasized the importance of cooperation in export controls. Zangger Committee members introduced language for the Final Declaration of the conference similar to that introduced at previous conferences, including positive recognition of the Committee's work. At the same time, NAM member countries stressed the need for "coordination of export control policies among all interested States parties to the extent possible," with the aim of contributing to nonproliferation objectives of the NPT and thereby facilitating transparency and participation in the exchange of nuclear items and technology.¹³ These proposals, well-crafted by suppliers as well as recipients, found very wide acceptance but were not included in the formal outcome of the conference. One single delegation blocked consensus during the negotiations apparently for tactical reasons and at the end became a victim of its own tactics. This is regrettable, because acceptance of the proposals could have resulted in a more formal platform for wider cooperation among NPT members. The Zangger Committee, as an experienced forum for coordi-

nation and harmonization of national export policies, could have played an important role in a new formal arrangement.

As so many NPT parties not members of the Zangger Committee have shown interest in the proposals for a more formal arrangement and the role the Zangger Committee could play, it would be a pity not to encourage and construct such an improved forum for dialogue. Future meetings of the Zangger Committee should take up this issue and consider how to approach the demands from NAM countries, taking into account that the Committee includes an important member of the NAM and applications from other NAM states are under consideration.

While the 2000 NPT Conference did not adopt the proposal for coordinating export controls, it did include a paragraph on export controls. It was the first time that the conference recognized in the Final Declaration the necessity of national rules and regulations on export controls to ensure the ability of parties to meet their commitments with respect to nuclear transfers. Furthermore, the conference urged all states to establish and implement appropriate rules and regulations.¹⁴

The Zangger Committee and the Call for Transparency

The 1995 NPTREC produced three decisions interlinked in a package. In this package, the indefinite extension of the Treaty was accepted with the understanding that future five-year reviews of the NPT's implementation would be based on the clear criteria set out in the "Principles and Objectives for Nuclear Non-proliferation and Disarmament." Before 1995, implementation reviews covered all aspects of the NPT in a general way; under the new review process, each conference receives better guidance from its predecessor. The "Principles and Objectives" set clear lines and in some cases even timeframes for goal attainment. These make it easier for the following review conference to verify whether these goals have been achieved.

For export controls Decision 2, Principle 12 is of prime importance, accompanied by Principles 9 and 11, both dealing with the role of the IAEA, and Principle 17, which calls for "transparency in nuclear related export controls...within the framework of dialogue and co-operation among all interested States party to the Treaty."¹⁵

The Zangger Committee has met this request for many years.

The chairman of the Zangger Committee presented papers on the Committee's organization and work in two seminars, held in Vienna in 1997 and New York in 1999.¹⁶ In discussions with representatives from NAM countries, some of the misunderstandings being raised regarding the supposedly secretive nature of the Zangger Committee were discussed, and its main purpose was re-stated. The Zangger Committee considers itself the "faithful interpreter" of the NPT export control requirements in Article III.2. Any interpretation of these requirements has to be applicable for all members if and when they come into a situation where export control decisions have to be taken. Therefore the Committee is aware of its responsibility in drafting and amending its Understandings on the basis and within the framework of the NPT. The Committee is open for consultations with all states and repeatedly answers, through its chair and secretary, the questions put to it. Reasonable confidentiality measures have been undertaken with the aim of protecting national security considerations while pursuing nonproliferation objectives.

THE COMPLEMENTARY ROLE OF THE IAEA IN EXPORT CONTROLS

The IAEA's role in export controls dates from the early 1960s, when supplier states made IAEA safeguards a condition of supply on contracted nuclear facilities. These "facility related safeguards,"¹⁷ based on trilateral agreements between the supplier, recipient, and IAEA, only related to particular facilities in a recipient country and not to the whole fuel cycle. With the adoption of the NPT in 1970, the scope of safeguards was widened by Art. III: all NNWS parties had to accept safeguards on all nuclear material in their country under an agreement with the IAEA. The model safeguards agreement, published in 1971 as IAEA document INFCIRC/153, serves as a basis for such agreements. With the increase over time in the NPT membership, only a very few states still remain outside this regime.

In 1991, when the world community found out that Iraq, a NNWS member of the NPT, had attempted to develop a clandestine nuclear weapons program, the NPT safeguards system was scrutinized. This scrutiny suggested that the scope of information available to the IAEA and its verification possibilities were inappropriately limited. As a result, new sources of information were to be made

available to the IAEA safeguards system (through an "Expanded Declaration"). At the same time, the Agency would be given new "powers" to review the accuracy and completeness of member states' declarations through improved means of information treatment, including better data processing means in the Secretariat, as well as through a new kind of inspection, called "complementary access."

After years of intensive work, the IAEA Board of Governors in May 1997 approved the model Additional Protocol, IAEA document INFCIRC/540. It describes the new elements of the IAEA safeguards system, which became an "integral" part of the existing safeguards system, as described in INFCIRC/153.

The Significance of the Additional Protocol for Export Controls

The new information required in the so-called "Expanded Declaration" from safeguarded countries includes reports on *exports* as well as imports of Trigger List items.¹⁸ This information arriving in the Agency will be added to the safeguards database on that particular recipient country (its "country file") and will enable the Agency to compare such new information with all the other information acquired.

This enhances safeguards, because the IAEA can evaluate for instance the importance of a *particular* piece of equipment for the nuclear program of a *particular* recipient country. It adds to the ability of the IAEA to acquire a continuously improving "insight" into the nuclear program of any individual country. As all different types of information will be integrated into one system, the Agency uses the term "integrated safeguards" to refer to its efforts to combine information from different safeguards measures.

Export reports to the Agency will create awareness of transfers, while import reports will provide confirmation if a transfer has been completed as foreseen. Or, if the item has not arrived, the Agency will have to act in cooperation with the states involved in the transfer. In this connection the important role of "enhanced information treatment" has to be emphasized. It should enable the IAEA to acquire its own "intelligence capability" and thereby to be as independent as possible from "outside skills."

Why devote so much attention to IAEA safeguards under the theme of export controls? This subject is important in two ways: (1) because, as already mentioned above, IAEA safeguards are a condition of supply and

(2) because not all NPT members yet agree that the text in Art.III.2 means NPT-type safeguards (FSSG). Only if we answer this question in favor of FSSG will the new Additional Protocol be included as a condition of supply. As the 2000 Review Conference was not yet ready to answer this question positively it is extremely important to clarify this question for the next NPT Conference, for which the preparatory process will start in Spring 2002. A review of the text of Article III can provide this clarification.

The Principle of Universality in Article III of the Treaty

To understand NPT export controls it is necessary to look at Art. III in its entirety (highlighting added):

Article III

1. Each non-nuclear-weapon State Party to the Treaty undertakes to accept safeguards, as set forth in an agreement to be negotiated and concluded with the International Atomic Energy Agency in accordance with the Statute of the International Atomic Energy Agency and the **Agency's safeguards system**, for the exclusive purpose of verification of the fulfillment of its obligations assumed under this Treaty with a view to preventing diversion of nuclear energy from peaceful uses to nuclear weapons or other nuclear explosive devices. Procedures for the safeguards required by this article shall be followed with respect to source or special fissionable material whether it is being produced, processed or used in any principal nuclear facility or is outside any such facility. The **safeguards required by this article** shall be applied on all source or special fissionable material in all peaceful nuclear activities within the territory of such State, under its jurisdiction, or carried out under its control anywhere.

2. **Each State Party** to the Treaty undertakes not to provide: (a) source or special fissionable material, or (b) equipment or material especially designed or prepared for the processing, use, or production of special fissionable material, to **any non-nuclear-weapon State** for peaceful purposes, unless the source or special fissionable material shall be **subject to the safeguards required by this article**.

There is one message in this article, which could be called the "principle of the universality of FSSG." In other words, the article is designed to bring all NNWS under the FSSG regime of the IAEA: Art. III.1 brings in those who become parties to the Treaty, and Art. III.2 covers all the others who do not join the Treaty. They shall also have to be subject to IAEA-FSSG *as a condition of supply*. Any other interpretation of Article III would simply mean that the drafters of the NPT had wanted to give privileged treatment to NPT non-parties, by granting them cooperation with less severe verification requirements.

Article III.2, the export control paragraph, requires NPT members to only supply especially designed or prepared (EDP) nuclear items to NNWS if they accept "the safeguards required by this article." The wording "required by this article" implies full-scope safeguards. There are no other safeguards described in Art. III. The NPTREC in its Decision 2, paragraph 12, demanded that new supply arrangements for Trigger List items should require, "as a necessary precondition, acceptance of IAEA full scope safeguards."¹⁹ This Principle 12 was reiterated and confirmed by the 2000 NPT Review Conference. Unfortunately the conference was not yet able to reach agreement on a clear statement that this Principle is inherent in Article III.2, and therefore mandatory for all exports from NPT States. This would have contributed to the universal adherence to the Additional Protocol and its applicability as a regular, NPT-based, element for supply policies, and furthered the principle of equal treatment of all states, party or non-party.

Internationalization of Export Controls

To understand what additional roles the IAEA could play in export controls in the future, it is important to look back to the discussions in the NPTREC and its decisions in relation to export controls. Some delegations in the conference's Main Committee II demanded "multilateralization of export controls." In the discussions on this proposal, representatives of supplier countries emphasized that Article III.2 clearly indicates that export licensing is a *sovereign* obligation of each individual state, which has to carefully scrutinize all possible proliferation risks before allowing a transfer out of the country.

This sovereignty on the other hand also includes the *right* for a state to choose to whom it wants to export goods. "If I do not like my neighbor, I will not supply

him!” That is valid for any item, for fruits as well as for nuclear items.

But if an export license after careful consideration of all relevant aspects has been granted, and *if the item has gone across the border*, it may be understandable that a recipient country would not want the supplier to further interfere in its sovereign national program. At the same time, everybody would reasonably understand that the necessary international security requirements have to be met, and this means somebody has to be in charge: somebody who has a capable safeguards system that could handle such transfer controls. Preferably, it should be an international, independent, and impartial organization.

This speaks clearly for the IAEA, as in 1995, at the time of the conference, its program for a strengthened safeguards system was under way, and the obligation for states to provide export/import information was contained in this program.

As a consequence, the NPTREC, in its Decision 2 on “Principles and Objectives,” expressed clear views in connection with IAEA safeguards and in relation to export conditions:

- In Principle 9, it stated *inter alia* that the IAEA is the competent authority to verify and assure compliance with the safeguards agreements under Art. III and that “[n]othing should be done to undermine the authority of the IAEA...” It further demanded that “States parties that have concerns regarding non-compliance...should direct such concerns, along with supporting evidence and information, to the IAEA...”²⁰
- In Principle 11, it gave guidance for the program 93+2.²¹
- In Principle 12, as noted above, it stated that “[n]ew supply arrangements...should require, as a necessary precondition, acceptance of IAEA full scope safeguards....”

These three Principles—in connection with the Additional Protocol—also clarify the role of the IAEA in the verification of the peaceful and proper use of a transferred Trigger List item. The only requirement is that the exporting state informs the IAEA of such a transfer and the importing state confirms the receipt.

Therefore the Additional Protocol should be seen as a further step in the implementation of the results of the NPTREC, which serves to improve the *design* and in par-

ticular the *scope* of those safeguards that the drafters of the NPT most likely had in mind.

What are the tasks of the exporting state at present and how can the IAEA be involved in those tasks in the future? There are two tasks for the exporting state at present:

1. to implement the sovereign obligation under NPT Article III.2 to decide upon export licenses and to make sure that all requirements will be fulfilled in the recipient countries (The criteria for these requirements are clarified, harmonized, and agreed upon in exporters groups like the Zangger Committee.); and
2. to make sure that an item, once it has gone across the border, will arrive and will be used properly in the recipient country.

In the future, while for task 1 the “exporters groups” will continue their work in the usual way, e.g., by exchanging information among members, reviewing their licensing “criteria,” or adopting amendments to the Trigger List, task 2 can be moved to the IAEA, once the necessary means for implementation of the Additional Protocol are in place.

This means for the IAEA that its Secretariat in the future will have a clear function in export controls “once the exported item has gone across the border.” The increased role of the IAEA will help to lessen the—often politically motivated—tensions between suppliers and recipients. Recipients will not have to accept the interference of other states in their sovereign national programs.

As countries seem to understand and accept that there is a need for appropriate security measures, but are suspicious that security considerations may be used as a cover-up for commercial interests, they are more willing to accept such security measures if they are implemented by the IAEA, an international, independent, and impartial organization. This was confirmed by the last NPT conference.

But to put the IAEA into the position to play its role, it is necessary that recipient countries adhere to the Additional Protocol. NPT Parties should emphasize the importance of universal adherence and also clarify the legally binding nature of the Additional Protocol vis à vis the NPT. The following analysis explains why the Additional Protocol should be considered both a desirable goal and a legal obligation.

Promoting Adherence to the Additional Protocol

As the Additional Protocol is an elaboration on and improvement of the IAEA safeguards system, it lies within the legal framework of Art. III.1, which provides the basic obligation for a member state to accept safeguards in accordance with the Agency's safeguards system, and therefore to negotiate with the IAEA the necessary safeguards agreement in line with that system. It seems to be a logical consequence, therefore, that whenever the safeguards system of the IAEA is changed (as was so significantly done in 1997), the obligation of an NPT member state in line with Article III.1 includes attempting to implement the necessary adaptations in its NPT safeguards commitment. Thus the obligation to enter negotiations with the IAEA, with the purpose of reaching an agreement that would allow the IAEA to implement the additional safeguards, is inherent in Art. III.1. NNWS parties to the Treaty are obliged to enter such negotiations with the IAEA without delay.

Besides these legal considerations, there are a number of *political* reasons why it is in the interest of recipient countries to conclude Additional Protocols. Without stronger involvement of the IAEA through the Additional Protocols, export controls will always remain deficient, and this will require exporting countries *not* to lessen their efforts.

Furthermore, traditional export controls as the sole means to prevent recipient countries from acquiring goods for clandestine nuclear purposes have reached their limits. If we only rely on export controls, we will have to add more and more goods to the control lists and refine ever further the mechanisms of control. This will make such systems both more extensive and more sophisticated, until control is lost over the system. Signs of such a development can already be recognized now. How many experts are there who really understand the differences between the various control regimes in non-proliferation (nuclear, biological, chemical—not to mention the Missile Technology Control Regime and Wassenaar Arrangement)?

This development towards a loss of ability to maintain a complete overview suggests the need to widen the perspective of export controls. The responsibility of the individual supplier state for licensing should be complemented by the responsibility of the IAEA in technology transfer controls as outlined above. This would provide a better chance to detect breaches of compliance “in situ” of the

potential proliferation risk. Past experience reveals that, in cases of proliferation intent, goods are purchased in several different countries. This makes it difficult for the supplier to verify for what purpose an individual item would be used. But if, in addition to *supplier side* licensing activities, focus would be put on the *recipient side* through proper IAEA safeguards in the recipient country, there would be a better chance to recognize and reveal any significant clandestine nuclear activity.

By involving the IAEA, and vesting this international organization with the right to acquire information and access as necessary to get sufficient insight into the nuclear program of each individual country, one could say that “full-scope safeguards as a condition of supply” (FSSG/COS) is a logical pre-condition for the “multilateralization of export controls.”

A VISION OF THE IAEA “INTEGRATED SAFEGUARDS SYSTEM” (ISS)

The new ISS is designed to provide the Agency with a better insight into the nuclear program of any single state that goes beyond the “declared nuclear material accountancy.” Thereby, the Agency will be better able to detect any undeclared activities. Once the ISS is in place, the IAEA will be able to take over responsibilities that for the time being are considered to fall within the responsibility of each individual state, e.g., making sure that any transfer of a sensitive nuclear item outside its territory shall be secured at all times against proliferation and misuse. This responsibility has led supplier states to build up rather extensive systems for collecting information and confirming that sensitive nuclear commodities do not fall into the “wrong hands.”

If and when the Agency constructs a system that provides sufficient detailed information about nuclear activities, declared or undeclared, going on in each state, and if that information is processed in a way that is manageable for the IAEA, then it would be possible to reduce duplication in the work on export controls of supplier states vis a vis the IAEA.

The export-control-related principles adopted by the NPTREC should be seen as an opportunity to lessen the burden of export controls for supplier states and to move that responsibility to the extent possible to the IAEA, the organization that will have at hand a complex, but at the same time well-structured, “integrated safeguards system.”

PERSPECTIVES FOR THE FUTURE

What work lies ahead of us on export controls? What should or could be done by the NPT membership, and in particular by the Zangger Committee?

There is no doubt that the 1995 package of Decisions 1, 2, and 3 builds a mandatory framework for the implementation of the NPT. In the framework of NPT export controls, certain goals could be set for future Review Conferences:

1. NPT member states should follow Principle 12, which established as a main criterion from Art. III.2 "full scope safeguards as a condition of supply." This Principle was confirmed at the 2000 NPT Review Conference, but it would be desirable for future conferences to explicitly state its linkage to Article III.2.
2. The 2000 NPT Conference endorsed the IAEA Additional Protocol. It is important that NPT member states should take a clear position that the Additional Protocol is not just a further instrument states may adopt, but a logical addition to, and an integral part of, the existing NPT safeguards system. It should not be considered optional, but a logical expansion of the legal obligation in Art. III.1 of the NPT. In this regard it is necessary to confirm that the conclusion of an Additional Protocol is an integral element of Principle 12 (FSSG/COS).
3. The IAEA should be further encouraged to develop the necessary mechanisms to "digest" the new information in the "Expanded Declaration" in an "integrated" and cost-efficient manner. The role of "enhanced information treatment" makes it important for the IAEA to acquire its own "intelligence capability" to be as independent from outside skills as possible.

What should the Zangger Committee do in the future?

First, the Committee should be encouraged to review and adapt, as necessary, its Understandings from time to time to take account of developments in the understanding of the NPT as coming out of the Strengthened Review Process.

Second, the Committee should in particular continue to review the "Trigger List" from time to time in light of technological developments. Third, the Committee should clarify the form of contribution it could provide to the work of the IAEA in connection with Annex II of the Additional Protocol. (Annex II lists the equipment and non-nuclear materials for which exports and imports should be reported.²²) As the Trigger List has become an ele-

ment in the "Additional Protocol," the review of the Trigger List now has a further aspect to be observed; i.e., when the Zangger Committee is amending the Trigger List, it should inform the IAEA Secretariat and explain its technical considerations and thereby be of assistance in the preparation of necessary decisions of the Board of Governors.

Fourth, the Zangger Committee should widen the circle of its consultations with individual countries, which play an increasing political as well as technical role in nuclear nonproliferation. In these consultations the question of "coordination" of export policies should be further discussed with the aim of exploring ways and means for how to establish appropriate mechanisms. These considerations should include options for how to assist NPT parties with less experience to establish and implement appropriate national rules and regulations as called for by the NPT 2000 Review Conference.²³

Finally, it is most important that information on all these steps has to be conveyed to all states parties to the NPT. The recent review conference has made it evident that a lack of information still exists, causing misunderstandings. Better preparation of future NPT conferences through the established preparatory process is of vital importance and should also be used for discussions on substantive issues such as the "principles and objectives." The next meeting of the Preparatory Committee is expected to be held in spring 2002.

Export controls continue to play an important role in slowing nuclear proliferation. As long as their functions are understood and supported, the Zangger Committee and the IAEA can help make export controls more effective. With the continued development of integrated safeguards, export controls can also be made less of a burden on or source of interference in the sovereign affairs of NPT member states.

¹ "The Treaty on the Non-Proliferation of Nuclear Weapons," *Treaty Series*, Vol. 729 (New York: United Nations).

² 1995 Review and Extension Conference of the Parties to the Treaty on the Non-Proliferation of Nuclear Weapons, *Final Document: Part I - Organization and Work of the Conference* (New York: United Nations, 1995), Annex, pp. 8-13.

³ International Atomic Energy Agency, *The Structure and Content of Agreements between the Agency and States Required in Connection with the Treaty*

on the Non-Proliferation of Nuclear Weapons, INFCIRC/153 (Corrected), reprinted June 1972.

⁴ International Atomic Energy Agency, *Model Protocol Additional to the Agreement(s) between State(s) and the International Atomic Energy Agency for the Application of Safeguards*, INFCIRC/540 (Corrected), September 1997.

⁵ International Atomic Energy Agency, *Communications Received from Members Regarding the Export of Nuclear Material and of Certain Categories of Equipment and Other Material*, INFCIRC/209, September 1974.

⁶ For more detailed information on the workings of the Zangger Committee, see Fritz W. Schmidt, "The Zangger Committee: Its History and Future Role," *The Nonproliferation Review* 2 (Fall 1994), pp. 38-44; NPT/CONF.1995/20 (April 20, 1995), "Multilateral Nuclear Supply Principles—Working paper submitted by Australia, Austria, Belgium, Bulgaria, Canada, the Czech Republic, Denmark, Finland, France, Germany, Hungary, Ireland, Italy, Japan, Luxembourg, the Netherlands, Norway, Poland, Portugal, Romania, the Russian Federation, the Slovak Republic, South Africa, Sweden, Switzerland, the United Kingdom of Great Britain and Northern Ireland and the United States of America as members of the Zangger Committee"; Dr. Fritz W. Schmidt, lectures presented to NSG seminars in 1997 in Vienna ("The Role of the IAEA in Nuclear Export Controls") and 1999 in New York (commentary speaker in Session 1, "The Development of Export Controls and Their Role in International Nuclear Non-Proliferation")—these proceedings are available through the Permanent Mission of Japan, Vienna.

⁷ *Memorandum A* defines the following two categories of nuclear material: (1) source material—natural or depleted uranium and thorium; and (2) special fissionable material—plutonium-239, uranium-233, and uranium enriched in the isotopes 235 or 233.

Memorandum B contains plants, equipment, and material in the following categories: nuclear reactors, non-nuclear materials for reactors, reprocessing, fuel fabrication, uranium enrichment, heavy water production, and conversion of uranium and plutonium.

⁸ International Atomic Energy Agency, *Communications of 15 November 1999 Received from Member States Regarding the Export of Nuclear Material and of Certain Categories of Equipment and Other Material*, INFCIRC/209/Rev.2, March 2000.

⁹ For further information on the NSG see Tadeusz Strulak, "The Nuclear Suppliers Group," *The Nonproliferation Review* 1 (Fall 1993), pp. 2-10; and various articles on the NSG in "International Seminar on the Role of Export Controls in Nuclear Non-proliferation," Vienna, October 7-8, 1997 (Proceedings are available through the Permanent Mission of Japan, Vienna).

¹⁰ These Guidelines were published as IAEA document INFCIRC/254, February 1978.

¹¹ NPT/CONF.IV/DC.1/Add.3(a), page 5, paragraph 27:

"The Conference notes that a number of states parties engaged in the supply of nuclear material and equipment have met regularly as an informal group which has become known as the Zangger Committee in order to co-ordinate their implementation of Article III, paragraph 2. To this end these states have adopted certain requirements, including a list of items triggering IAEA safeguards, for their export to non-nuclear-weapon states not party to the treaty, as set forth in the IAEA document INFCIRC/209 as revised. The Conference urges all states to adopt these requirements in connection with any nuclear co-operation with non-nuclear-weapon states not party to the Treaty. The Conference recommends that the list of items triggering IAEA safeguards and the procedures for implementation be reviewed from time to time to take into account advances in technology and changes in procurement practices...."

¹² International Atomic Energy Agency, *1995 Review and Extension Conference of the Parties to the Treaty on the Non-Proliferation of Nuclear Weapons*, INFCIRC/482, August 1995, Attachment, paragraphs 5 and 7.

¹³ The draft final declaration contained a paragraph 58, which did not find its way into the final product of the Conference:

"The Conference invites coordination of national export control policies among all interested States parties to the extent possible, through the IAEA, in a manner that will contribute to the non-proliferation objectives of the NPT and facilitate transparency and participation of all interested States parties in the fullest possible exchange of equipment, materials and scientific and technological information for the peaceful uses of nuclear energy, in conformity with Articles I, II, III and IV of the Treaty."

¹⁴ NPT/CONF.2000/28, page 8, paragraph 51:

"The Conference recognizes that national rules and regulations of States parties are necessary to ensure that the States parties are able to give effect to their commitments with respect to the transfer of nuclear and nuclear-related dual-use items to all States taking into account articles I, II and III of the Treaty, and, for States parties, also fully respecting article IV. In this context, the Conference urges States parties that have not yet done so to establish and implement appropriate national rules and regulations."

¹⁵ NPT/CONF.1995/32/DEC 2, paragraph 17.

¹⁶ Fritz W. Schmidt, lectures presented to NSG seminars in 1997 in Vienna ("The Role of the IAEA in Nuclear Export Controls") and 1999 in New York (commentary speaker in Session 1, "The Development of Export Controls and Their Role in International Nuclear Non-Proliferation")—these proceedings are available through the Permanent Mission of Japan, Vienna.

¹⁷ International Atomic Energy Agency, *The Agency's Safeguards System* (1965, as Provisionally Extended in 1966 and 1968), INFCIRC 66/Rev.2, September 1968.

¹⁸ INFCIRC/540 (Corr.), Art. 2a(ix).

¹⁹ NPT/CONF.1995/32/DEC 2, paragraph 12:

"New supply arrangements for the transfer of source or special fissionable material or equipment or material especially designed or prepared for the processing, use or production of special fissionable material to non-nuclear-weapon States should require, as a necessary precondition, acceptance of the Agency's full-scope safeguards and internationally legally binding commitments not to acquire nuclear weapons or other nuclear explosive devices."

²⁰ NPT/CONF.1995/32/DEC 2, paragraph 9:

"The International Atomic Energy Agency is the competent authority responsible to verify and assure, in accordance with the statute of the Agency and the Agency's safeguards system, compliance with its safeguards agreements with States parties undertaken in fulfillment of their obligations under article III, paragraph 1, of the Treaty, with a view to preventing diversion of nuclear energy from peaceful uses to nuclear weapons or other nuclear explosive devices. Nothing should be done to undermine the authority of the International Atomic Energy Agency in this regard. States parties that have concerns regarding non-compliance with the safeguards agreements of the Treaty by the States parties should direct such concerns, along with supporting evidence and information, to the Agency to consider, investigate, draw conclusions and decide on necessary actions in accordance with its mandate."

²¹ The program for "strengthening the effectiveness and improving the efficiency" of the IAEA safeguards was initiated by the IAEA Board of Governors in 1993 for an expected period of two years. Therefore the term "93+2" was used. The program 93+2 consisted of two parts. *Part I* concentrated on additional measures to improve safeguards within the legal authority of IAEA safeguards agreements based on the model, IAEA document INFCIRC/153. *Part II* was related to all those measures, which were necessary to strengthen the IAEA safeguards system, but for which the Agency so far did not have legal authority. Therefore a new legal instrument, "additional" to the existing safeguards agreement was necessary (INFCIRC/540).

NPT/CONF.1995/32/DEC 2, paragraph 11: "International Atomic Energy Agency safeguards should be regularly assessed and evaluated. Decisions adopted by its Board of Governors aimed at further strengthening the effectiveness of Agency safeguards should be supported and implemented and the Agency's capability to detect undeclared nuclear activities should be increased. Also, States not party to the Treaty on the Non-Proliferation of Nuclear Weapons should be urged to enter into comprehensive safeguards agreements with the Agency."

²² IAEA, *Model Protocol*, INFCIRC/540 (Corrected), Annex II.

²³ NPT/CONF.2000/28, page 8, paragraph 51.