# 2nd NSG International Seminar on the Role of Export Controls in Nuclear Non-Proliferation

# Preface

The Nuclear Suppliers Group held the 2nd NSG International Seminar on the Role of Export Controls in Nuclear Non-Proliferation from 8 to 9 April 1999 at the United Nations in New York.

The Seminar, which was led by Dr. Hans Blix, Director General Emeritus of the International Atomic Energy Agency (IAEA), included keynote speeches and commentaries by leading figures and senior experts in nuclear non-proliferation and export controls from around the world. With four individual sessions, spread over 2 days, the Seminar covered all the major aspects of what is undoubtedly one of the greatest challenges on the international nuclear agenda. Time was set aside for question-and-answer periods and the Seminar concluded with a Panel Discussion with speakers from all four sessions.

The Seminar, like the 1st Seminar, which was held in 1997, was organized in pursuance of the Principles and Objectives of the 1995 NPT Review and Extension Conference. It was thus an important instrument for furthering transparency about the role of export controls in nuclear non-proliferation and in the promotion of nuclear trade. In order to foster a genuinely open and far-reaching dialogue, an invitation was extended to government representatives, experts from the appropriate international organizations and academic and industry specialists from all nuclear supplier countries, actual and potential. This ensured that the broadest possible spectrum of institutions and organizations, including Ministries responsible for Foreign Affairs, Customs, Trade, Science and Technology, could benefit from attending the Seminar.


KEYNOTE SPEAKER
COMMENTATOR
COMMENTATOR
WILLIAM KENNEDY
EDWARD YAU
ANDREY EFIMOV
CYRUS NASSERI
RICHARD STRATFORD
HONG KONG, CHINA

*Hans Blix*

# Chair's Opening Remarks

It is evident that the issue of nuclear export controls is discussed in a very different atmosphere today from that existing in 1975 when the Nuclear Suppliers Group (NSG) was founded. At that time there was widespread eagerness to import nuclear related equipment and technology. It was "the future." There was also, among the relatively few nuclear suppliers, eagerness to export. Export controls were thus very unwelcome to many – even though they were modest compared with those that we have now. Today – I regret to note – there is much less interest in nuclear imports, especially nuclear power. Bio-technology and information technology now top the agenda. There are many more nuclear suppliers around the world seeking business but they are somewhat resigned in the face of the attitudes to nuclear technology that they so frequently encounter. Those attitudes are surely a greater impediment to nuclear trade than even the more stringent export restrictions we see today. Even more important, I believe, is the way in which the case of Iraq demonstrated to all the need for export restrictions – more effective export controls than those already in existence – in order to impede proliferation. This does not mean that there are no further questions, for example:

Are the present NSG Guidelines appropriate?

If NSG functioning and procedures are so open and the need for them is recognized, why not move them all into the framework of the International Atomic Energy Agency (IAEA)?

Adherence to the Treaty on the Non-Proliferation of Nuclear Weapons (NPT) and acceptance of full-scope safeguards may raise the presumption that a given nuclear programme is peaceful. What should States do in the exports sphere if there are facts which speak against that presumption? The case of Iraq showed that such a presumption could be false.

I shall not linger on substantive issues but move on to the question of why we are here. As you will recall, the NPT Review and Extension Conference, held in New York in May 1995, urged that transparency should be protected in nuclear-related export controls through dialogue and cooperation among all interested States Party to the NPT. In response to that request, the 1st Seminar was held in Vienna in 1997 and this 2nd Seminar is a follow-up to that first successful event.

Why New York this time, not Vienna? One advantage in New York is the very extensive representation of States here. It had also been expected that the Preparatory Committee of the NPT Review Conference (PrepCom) would meet here next week and that some of the participants of that Conference would come a few days early to join the Seminar. With the deferring of the PrepCom, we are missing that opportunity. On the other hand, the participants here will not be distracted by thoughts or discussions about a PrepCom next week. Invitations to the Seminar were sent to all Member States of the United Nations (UN) and there was special support for participation by developing countries. A number of specialized organizations that are able to contribute were also invited.

Now to the organization of the Seminar. Let me thank the United States Government for its great assistance and support for all the arrangements they made for us to meet in New York. I would also like to thank the organizers – not least the Point of Contact in Vienna – for the considerable work they have done to bring us together and to prepare for our discussions.

## *Biographical information*

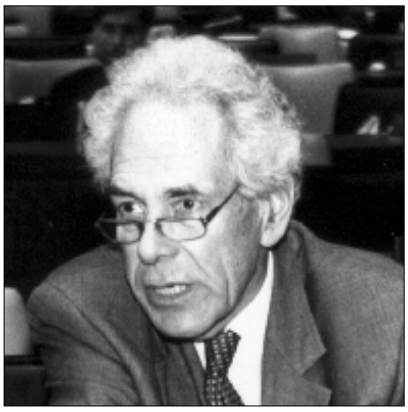
*Dr. Hans Blix was appointed Director General of the International Atomic Energy Agency in 1981 and was re-appointed for a fourth term of office by the IAEA General Conference in September 1993. He retired on the expiry of that term in 1997 and was awarded the title of Director General Emeritus by the General Conference. Upon unanimous recommendation of the Security Council, Dr. Blix was appointed Executive Chairman of the United Nations Monitoring, Verification and Inspection Commission (for Iraq) on 27 January 2000.*

*Dr. Blix studied at the University of Uppsala, at Columbia University, where he was also a research graduate, and at Cambridge, where he received his Ph.D. In 1959 he earned his Doctor of Law at Stockholm University and in 1960 was appointed associate professor of international law.*

*From 1963 to 1976 Dr. Blix was Head of Department at the Ministry of Foreign Affairs in Sweden and served as Adviser on International Law. In 1976 he became Under-Secretary of State at the Ministry of Foreign Affairs and was in charge of international development cooperation. In October 1978 he was appointed Minister for Foreign Affairs. From 1961 until 1981 he was a member of Sweden's delegation to the United Nations General Assembly, and from 1962 to 1978 was a member of the Swedish delegation to the Conference on Disarmament in Geneva. In addition, Dr. Blix was leader of the Liberal Campaign Committee in favour of retention of the Swedish nuclear energy programme in the referendum of 1980.*

*Dr. Blix has Honorary Doctorates from Moscow State University (1987), the University of Bucharest (1994) and the University of Managua, Nicaragua (1996).*

*Alec Baer*



# Nuclear Suppliers Group and its Time

## Introduction

I am honoured to have the privilege of presenting the opening paper of this 2nd Seminar on The Role of Export Controls in Nuclear Non-Proliferation (2nd Seminar). As you will have seen from the documentation, the Seminar programme can be condensed into four questions, one per session.

Where do we come from?

What are we doing?

What more could we be doing?

Where are we going?

I will try to answer the first question and to give you a historical and, at times, critical perspective on the Nuclear Suppliers Group (NSG). I will do my best to stick to what I know, because, as I read recently: “It is the privilege of older men to talk about everything. It is the tragedy of older men that they believe they can talk about everything.”

In talking to you, I will not present a systematic history of the NSG, first because it is well known to many of you and second because, if it were not, an IAEA publication (INFCIRC/539) is available and offers a very good summary of that history. I will therefore take this particular document as read. I will not talk about the Zangger Committee because its chairman will do that, much better than I could, later in this session. Without ignoring them completely, I will not emphasize the present activities of the NSG because they will be more properly handled in Session 2 and I will limit my comments about the future of the NSG to some personal suggestions because this theme is the topic of Session 4. In spite of these restrictions, I will still have plenty to talk about.

By way of introduction and as a brief reminder for those of you who may be new to this game, let me provide you with three sentences from the beginning of INFCIRC/539. Together, they give a concise summary of what the NSG is all about.

> *The Nuclear Suppliers Group (NSG) is a group of nuclear supplier countries which seeks to contribute to the non-proliferation of nuclear weapons through the implementation of two sets of Guidelines for nuclear exports and nuclear related exports.*
>
> *The Guidelines aim to ensure that nuclear trade for peaceful purposes does not contribute to the proliferation of nuclear weapons or other nuclear explosive devices without hindering international trade and cooperation in the nuclear field. The Guidelines facilitate the development of trade in this area by providing the means whereby obligations to facilitate peaceful nuclear cooperation can be implemented in a manner consistent with international nuclear non-proliferation norms.*

## Historical considerations: Placing things in context

History, and that of the NSG is no exception, can be summarized in a list of important events and dates to remember. This is the way I and, undoubtedly, many of you learned history in school. Lists of kings, names and dates of battles, treaties and their content were supposed to tell us what happened in the past. This is all wrong. History is much more than this; history reflects the behaviour of people, their daily life, their fears and joys, their knowledge and their religion, as much as the names of their kings and queens. Wars or invasions do not simply happen; they are always a consequence of a particular human and economic-political constellation. Take for instance three simple facts related to non-proliferation:

In 1945 Hiroshima was destroyed by an atomic bomb;

In 1955 the Canadian cabinet decided to sell a reactor to India;

In 1973 the Organization of the Petroleum Exporting Countries (OPEC) imposed an embargo on oil exports.

What actually led to these events? What triggered them? Who was most influential in the decision-making and, last but not least, what was going on in the world at that time?

In the first case, these questions have been reasonably well answered and the information is in the public domain. In the second case, the information is available but not generally known. Remember, for instance, that 1955 was also the year of the "Geneva Conference" in the framework of the "Atoms for Peace" policy of President Eisenhower. As to the third case, how many of you remember the close relationship between the first oil embargo and the fourth Arab-Israeli war, the so-called Yom Kippur war? In these cases, and in many others, the historian should try to understand all the ins and outs of apparently

unrelated events. Even if we ourselves lived through a particular period, and because our memory is quite selective, we must make an effort to place ourselves back in time to gain a better understanding of what actually happened and why.

In reviewing with you some key aspects of the NSG, I will try to present information that may help you to better understand what was actually happening in the world at the time, why the NSG was created and why it took the form it did.

I shall first go through a rapid historical reminder and will recapitulate three important periods of recent history. The first goes from the end of the World War II to the eve of the founding of the NSG. The second covers the creation of the NSG and the third will review the last 10 years. I shall then briefly compare the world of 1975, when the NSG was born, with that of 1999 and emphasize the tremendous differences between the two. I will then come to the role and the activities of the NSG since its birth, look at some of the problems it may be facing now and, finally, tell you what future I am dreaming of. As the prophet Ezekiel said: "*Your old men shall dream dreams, your young men shall see visions*."

## 1945-1973: Fear of the bomb

The beginning of this period is dominated by the fear of a nuclear World War III and by the arms race. I can remember that when we students were demonstrating against the bomb in the late Forties, we were convinced that a nuclear war was just a few years away.

| | |
|---|---|
| 1945 | Hiroshima and Nagasaki |
| 1949 | First USSR bomb |
| 1952 | First UK bomb |
| 1961 | First French bomb |
| 1962 | The Cuban crisis |
| 1964 | First Chinese bomb |

Paradoxically this is also the period when civilian uses of nuclear power raised the greatest hopes. Most countries that could afford it envisaged a nuclear future, all hopes were allowed, clean and inexhaustible energy was at long last available. The 1953 Eisenhower initiative, "Atoms for Peace," fits in there, as does the Geneva Conference of 1955 where a nuclear reactor was publicly displayed for the first time. (This was then bought by Switzerland and operated until 1995.)

Because nuclear energy was perceived to be the ideal energy for the future, no country was willing to accept any restriction on its nuclear programme, and suppliers were rushing into this new market to supply customers. There was nevertheless a feeling among the Nuclear Weapons States (NWS) and a few others that to avoid a nuclear war between the U.S. and the USSR some agreement was necessary. The Cold War had begun around

1947, when the U.S. still had a monopoly on nuclear armament. The situation changed after 1949, and even more drastically after 1953, when both the U.S. and the USSR exploded a hydrogen bomb in the same year. In the Fall of that year, President Eisenhower, having to take a position on this evolution, looked for some positive element to balance the gloom and doom of proliferation and came upon the idea of "Atoms for Peace," which was presented to the United Nations (UN) General Assembly in December 1953.

In 1957, Ireland made a first attempt at the UN towards a non-proliferation agreement but without much success. It tried again in 1959, without success, again in 1960 and was finally successful on its fourth attempt in 1961. Why only then? Because the new U.S. President (Kennedy) had reviewed U.S. policy towards the nuclear armament of Western Europe and of Germany in particular. He had decided that the risk of proliferation would be too great if Germany became a nuclear state and had therefore decided that a US-USSR agreement on non-proliferation would be a wiser policy. This idea was not new; it had already been in the air for almost 15 years.

In 1962, the Cuban crisis put pressure on the NWS to find some mutual arrangement and, in 1964, the Chinese nuclear explosion increased the pressure so much that in 1965 – and independently from each other – the U.S. and the USSR each proposed a draft of a non-proliferation treaty. You know the rest. The Treaty on the Non-Proliferation of Nuclear Weapons (NPT) was signed in 1968 and entered into force in 1970. One consequence was the creation, in March 1971, of the so-called Zangger Committee on Article III.2. (Incidentally, and this also is part of history, the first informal meeting of the future committee took place in July 1970 and included 17 western countries. Members of the eastern bloc, wary of some American trick behind that committee, started joining only in 1974.) The entry into force of the NPT provoked a general sigh of relief. We now had a treaty that, in spite of its weaknesses was, hopefully, to prevent further horizontal proliferation and save us from a nuclear war. By then, the Cold War had in fact already become a "Cold Peace" as Eric Hobsbawm put it. Some of you may also remember that in 1970 a barrel of oil was still selling for $2.50.

## 1973-1977: The birth of the NSG

1973 marks the Yom Kippur war of Israel and its Arab neighbours and the first oil crisis caused by OPEC. Industrial countries realized that they could not do much about the new situation and that if they did run out of oil (for political reasons) they would need to find some replacement such as, for instance, nuclear reactors. However, if nuclear reactors were built all over the planet, the risk of proliferation would increase considerably.

1974 was not a good year for the U.S. It marked the end of the Vietnam war, the end of Watergate and the year of the resignation of President Nixon. Add to this the fact that, on May 18, India exploded a nuclear device with the unwitting help of earlier Canadian exports. It suddenly became clear to everybody that the NPT was not a good enough protection against proliferation. Maybe even worse within the context of potential proliferation, in early 1975, both France and Germany announced plans for major nuclear supplies to Pakistan and Brazil respectively.

It seems paradoxical today that, at this very same time, France – which had always refused to collaborate with its allies on export controls and had, for instance, refused to belong to the Zangger Committee – suddenly reversed its policy, as indicated by President Giscard d'Estaing to President Ford in December 1974. It was thus under the pressure of a number of external events that the U.S. called a meeting of a very small number of countries to consider reinforcing nuclear controls.

Held in April 1975, this meeting included, in addition to the U.S. and the USSR, Canada (badly burned by its exports to India), the UK, Japan, Germany and France, the latter two not NPT members but keen on exporting nuclear equipment and material. The meeting took place in London ("London Club") and was held in the greatest secrecy at the request of France and of the USSR. The former did not want to appear on the national level to be moving closer to the NPT, and the latter feared a possible loss of prestige in the Third World. It even went so far that no minutes were held of that meeting! As you know, this exaggerated (from my point of view) emphasis on confidentiality has created many problems for the image of the NSG over the years. The Group held five meetings in 1975 and established a first "Trigger List" and a set of Guidelines. It also agreed that gaining members would be beneficial but participants wanted to make sure that the Guidelines on which they had compromised would not be undermined by the newcomers. The NSG decided therefore to take all its decisions by consensus.

The secrecy could not last long. On 18 June 1975, the *New York Times* wrote about the Group followed, on the next day, by the *International Herald Tribune*. The information released made many people in Euratom very unhappy, in particular the Dutch who were operating the enrichment installation "Urenco" jointly with Germany and the UK and could see that they would be bound by decisions on sensitive technologies without having had their say.

As of 1976, the "Club" was therefore enlarged with the Netherlands, Belgium and Italy as well as Sweden. And because the USSR was afraid to be put in a minority in such a group, Poland, Czechoslovakia and the German Democratic Republic (DDR) were also invited. Meanwhile, it had become clear that the activity of the Group would have a direct impact on that of the Committee looking after application of Article III.2 of the NPT. The chairman of this Committee, Prof. Zangger of Switzerland complained bitterly (but diplomatically) about not having been invited to the NSG discussions and, in 1976, was therefore also invited to participate. And that is how Switzerland became the 15th member of the NSG in 1977!

## 1989-1999: The recent history

After 1977 the NSG did not hold any meetings until 1991, which does not mean that it did not function. In fact, the number of its members increased from 15 to 27 and the functioning of the Guidelines (as they were then) was adequate.

The Eighties were not a particularly successful decade in the world. Unemployment kept growing in the Western countries and the Third World was affected by numerous movements of revolution and by assassinations of political leaders. Eastern Europe was

becoming increasingly impatient under its socialist regime, one warning sign being the creation of Solidarnösc, the Polish Union, in 1980. In 1985, Gorbachev came to power and, 2 years later, launched the glasnost and perestroika campaign. 1989 was marked by the newly gained independence of countries of Eastern Europe symbolized by the fall of the Berlin Wall. In 1991, the USSR had ceased to exist.

Meanwhile, in 1990, Iraq had occupied Kuwait and, in 1991, following the Gulf War, the extent of the Iraqi military nuclear programme had become evident. Prior to the war, the world had been pretty much unaware of this programme and it was, therefore, a coincidence that the U.S. had been trying, for a time already, to exert some control over so-called "dual-use" items; and it was also coincidental, I believe, that in early 1991 the Dutch proposed that the NSG meet again in a plenary meeting. In fact, a first informal meeting of representatives of NSG countries was convened even before the NSG Plenary, specifically to discuss the issue of dual-use items.

Since 1991, the NSG has been meeting once a year in Plenary and has activated a number of committees to debate different issues. The results have been impressive:

1992 Approval of a dual-use control regime and of a first dual-use list;
Declaration that all NSG adherents should require full-scope safeguards, i.e. require from all users that all their nuclear installations be under International Atomic Energy Agency (IAEA) control;
First indication that some outreach activity in favour of the newly independent states would be important.

1993 Beginning of formal outreach activities; the chairman led a delegation to Brazil and another one to China; first steps towards a computerized information-sharing system.

1994 Numerous amendments and additions to the Trigger List, seminar for the newly independent states (NIS) in Warsaw, creation of a focal point for contacts with NIS and of a point of contact (POC) for NSG activities.

1995 Technology controls are added to the Trigger List. (They were part of the dual-use list but not of the Trigger List until then.) The NPT extension conference requests more transparency in export controls.

1996 Decision to write what was to become INFCIRC/539, harmonization of the Trigger List with that of the Zangger committee.

1997 1st Seminar on transparency held in Vienna.

1999 2nd Seminar on transparency here in New York.

Throughout this period, the membership of the NSG has kept growing, and stands now at 35.

## The world of 1975 and that of 1999

It is evident that the world we live in is very different from that of 25 years ago. Without belabouring the evidence, let me point out some aspects that are relevant to the NSG and to its activities.

| *In 1975:* | *In 1999:* |
|---|---|
| ▪ The price of oil had shot up from $2.50/bl to $11/bl and people were concerned about future embargoes and unreliable supplies. | ▪ The price of oil keeps coming down ($10.00/bl in 1999) and supplies are abundant (not necessarily an indication of future developments). |
| ▪ Numerous countries plan to develop their civilian nuclear capacity. | ▪ Except for a limited number of countries, development of nuclear programmes has stopped, often because of poor economics, oil and gas being cheaper and abundant. |
| ▪ The use of civilian nuclear power is unquestioned anywhere. | ▪ The use of civilian nuclear power is contested and formally abandoned in some countries of Western Europe. |
| ▪ The world is divided between East, West and "non-aligned" or Third World; the arms race is still on. | ▪ The cold war is over and already forgotten by many; the trend is to "globalization" and liberalization. |
| ▪ About a dozen states pose a serious nuclear proliferation concern. | ▪ Proliferation is still a concern but the number of potential offenders has decreased and those remaining are essentially the same ones as 25 years ago. |
| ▪ Nuclear armament is an option seriously considered by various countries. Sweden and Switzerland, for instance, have developed advanced plans in this direction. | ▪ Most countries have abandoned the idea that nuclear weapons could be of any use to them. |
| ▪ The NPT is in force, the only export control mechanism is that of the Zangger Committee; the NSG does not (yet) exist; India has exploded a nuclear device in the previous year. | ▪ Besides the Zangger committee, the NSG that counts 35 members, has developed a Trigger List now identical to that of the Zangger committee, plus a list of "dual-use" goods and a mutual information system. The IAEA Safeguards Agreements are in the process of being complemented with a Protocol that allows the Agency to inspect equipment and installations. India and Pakistan have exploded a |

| In 1975: | In 1999: |
|---|---|
| | nuclear device in the previous year. |
| ▪ There is a flourishing market for nuclear exports. Switzerland's exports, to take one example, run from reactor vessels to heavy-water plants and many more items. The machine industry as a whole represents 51.5% of the total exports of that country. | ▪ The market for nuclear exports has shrunk. Switzerland hardly exports any item from the Trigger List and the machine industry contributes only 44.6% to the total exports of the country (which obviously reflects a change in the type of society that we have and is not related to proliferation concerns). |
| ▪ The original group of 15 NSG countries includes almost all exporters of Trigger List items. | ▪ "Most countries in today's world are able to produce one or more items from the Trigger List or the dual-use list," as Carl Thorne put it at the 1st Seminar on the Role of Export Controls in Nuclear Non-Proliferation (1st Seminar) in 1997 in Vienna. "Most countries in today's world are able to produce one or more items from the Trigger List or the dual-use list," as Carl Thorne put it at the 1st Seminar on the Role of Export Controls in Nuclear Non-Proliferation (1st Seminar) in 1997 in Vienna. |

## The role of the NSG between 1975 and 1999

What has the NSG done during the time between these two dates, while the world was changing so drastically?

In spite of all the criticism that it was a cartel aiming at preventing the spread of nuclear technology to non-members, the NSG has definitely been a positive factor of non-proliferation. Its role and importance have clearly not been limited to formal denials of items from one or the other list. A not quantifiable, informal influence of the NSG on the policies of various States is not to be denied, be it through the use of the traditional diplomatic channels or through other contacts between Member States and other States. It has been said that the whole NSG scheme can never prevent a state from proliferating, but will only slow it down. This may be true, but gaining time is also a profitable approach to such problems.

I do not want to give all the merit for progress of non-proliferation to the NSG, but I wish to give you one example that you can interpret as you wish. In 1980 a specialist in the field listed 11 countries as "threshold countries," i.e. countries that could and may build or buy nuclear armaments within less than 10 years. In 1999, what is the situation regarding these same 11 countries?

- One has been placed under UN control (Iraq);

Two have "come out" and exploded nuclear devices;

- One has definitely renounced nuclear arms;
- Two do not appear to represent a serious menace at this time (for different reasons);
- One remains very much a threshold state;

Four of these countries are now NSG members.

What is remarkable is that only three countries of the 1980 list are still threshold states, if you still count India and Pakistan as such, and only one new one needs to be added to it (Democratic Peoples Republic of Korea, DPRK).

In some ways, the present NSG still reflects the world of 1975. It is extremely difficult for an institution working by consensus to modernize itself. On the other hand, the changes operated by the NSG have all been improvements. Think of the dual-use list, of the full-scope safeguards requirement, of the outreach work, of the trend towards a non-proliferation policy – not to mention all the technical improvements to the existing lists. I do believe that we are making progress towards non-proliferation.

## The outreach: 1992-1999

Let me say a few words about the various efforts undertaken by the NSG to gain adherents to the Guidelines and to explain what it is doing. As the second meeting of the "new" NSG was held in Warsaw in 1992, it is probably logical that the first targeted effort of information was directed at the NIS. From 1993 onwards, further efforts have been made. Successive Chairs have led delegations to many countries and individual NSG members have contacted other countries bilaterally. Two seminars have been held in Warsaw, one for the NIS (1994) and one for the Baltic States (1995) and we are now in the second more general international seminar on the role of export controls in non-proliferation, the first having been held in Vienna in 1997.

Overall, more than 30 countries have been contacted, informed about the existence of the NSG, about its purpose, its mode of operation and its lists. From reactions in those countries, they fall into five groups:

Four have become members of the NSG;

Six wish to adhere to the Guidelines, they have started the necessary actions but for various reasons (administrative or political) they are not there yet. They are "probable" adherents;

Eighteen are positively motivated towards the NSG but do not feel that they are affected at this time. They are somewhat non-committal but may reconsider the issue later if required. They are "potential" adherents;

One displays internal tensions between those who want to join and those who fear for their exports. Depending on who wins the internal struggle, they will or will not adhere;

One exporter only does not want to apply the Guidelines at this time and does not want to request full-scope safeguards (FSS) from its users.

Besides these contacts, all IAEA members have been made aware of the role and purpose of the NSG through the publication of INFCIRC/539. (However, even among NSG members, the existence of that INFCIRC may not be all that well known).

As far as I understand it, the purpose of this outreach is double: on the one hand it serves to publicize the NSG and to demonstrate "transparency," and on the other, it could allow the NSG to recruit a few more members. The first goal seems to have been reached. I do not believe that a single supplier or potential supplier in the short term or even a major user or potential user in the short term ignores the existence of the NSG and of its mechanisms. The information has reached those states directly concerned. On the second goal, that of membership, I am ambivalent. Yes, the NSG has grown from 27 members in 1991 to 35 in 1998, but during its period of "secrecy" between 1975 and 1991 it grew from 15 members in 1977 to 27 in 1991. If you calculate the ratios you will see that, on average, the increase is of 0.86 member/year during the earlier period and of 1.14 member/year during the second. I doubt that this difference is significant.

The NSG should do some thinking about its outreach programme and possibly become more specific in targeting various countries. Rather than more "horizontal" outreach (contacting more countries), I would concentrate on "vertical" outreach (supplying in-depth information to some of the countries contacted or helping them to develop their non-proliferation legislation, for instance).

## The NSG in 1999

The NSG is facing three difficulties in the world of 1999, the first one of which, at least, it can do little about. The world is under the overwhelming influence of economic liberalization, meaning less State control and more power to private enterprise. How can a government-based control system be maintained and possibly reinforced in such an economic and political climate? Can people (and politicians are people) be convinced that controls should not be relaxed in spite of the apparent quiet on the proliferation front? As this issue is here to stay, it needs to be addressed and specific measures may need to be taken.

The second difficulty is of a different nature. More and more control regimes are being put in place or have been put in place – the Zangger Committee, the NSG, the Australia Group, the Missile Technology Control Regime (MTCR), the Comprehensive Test Ban Treaty (CTBT), etc. – and more may come. If I judge by what is happening in my own country, the trend is towards a better coordination of all these groups, which is good but under the aegis of people in External Economic Affairs, i.e. public servants with more understanding of international trade than of the subtleties of nuclear technology. The

nuclear technical knowledge required is slowly being lost from the public service in charge of the various control systems. At the same time as this is happening, the lists are gaining in length and in complexity. This state of affairs, combined with a pressure towards greater liberalization, may rapidly become detrimental to the effectiveness of the whole control system.

This brings me to my third point. The NSG system is a mechanism of technical control. It needs to follow the progress of technology as closely as possible but cannot neglect any of the earlier items on the lists and "clean them up" from time to time. A would-be proliferator does not need the latest technology; he may use an older method, a less efficient, more costly and slower one, but one that is good enough for him. He does not operate according to the laws of the market. The lists are therefore becoming ever longer and ever more complex. They are slowly approaching the limits of practicability so that the chances of slipping something by the controls are increasing. By contrast, denials represent, on average, less than 1% of export requests (INFCIRC/539) and, for instance, less than 5% in the UK (1st Seminar). Given the general climate that I referred to above, how can one justify the continued existence of a somewhat complex system of controls in a period of relative quiet on the proliferation front?

The quick answer is that even if only a single would-be proliferator is slowed down in his efforts or prevented from seriously considering nuclear weapons, it is well worth the effort. I know, however, that as time goes on, as the memory of the fear we all had of a third world war vanishes and as the tendency grows to consider proliferation as a regional problem that does not concern us directly, it becomes increasingly difficult to maintain the system established in 1975 and improved continuously ever since.

The NSG can and should be proud of its achievements. It has shown some flexibility all along and will have to demonstrate more of it in the future. As I said at the beginning, it is not for me here to plan the future of the NSG and to make suggestions on how it could improve. A number of suggestions have already been made at the 1st Seminar and more will undoubtedly be made here this week.

As I am not directly involved with NSG activities any more, let me look at the present situation of non-proliferation from the outside and make what may seem to you some rather outrageous reflections.

First, I find it encouraging to be living in a period of relatively low, though not negligible, proliferation risk, but I believe that we should take advantage of it to prepare for the next crisis;

I find it personally unacceptable that the NWS have not made more efforts in the last 30 odd years to comply with Article VI of the NPT on nuclear disarmament;

I find it odd, even though it is somewhat understandable, that the IAEA and the NSG do not want to have any formal connection with each other;

I find it unreasonable to maintain the present sub-parallelism between the NSG and the Zangger Committee;

I find it most regrettable that because the NPT is cast in concrete for eternity, the Zangger Committee is prevented from evolving. Structures (and animals) that do not evolve are headed for extinction;

I find it absurd that a State can abide by the NSG Guidelines without automatically becoming a member of the NSG;

I find it extraordinary that the NSG has not made more efforts in the past to improve its structure and its functioning; and finally,

I find it deplorable that no sign of fundamental reassessment has yet taken shape.

## What of the future?

A fundamental law of nature is that any evolution consists of quiet periods interrupted by brief crises. This is true of animal evolution, this is true of the development of rivers, of human history and, quite clearly, of scientific progress. I am not naive enough to believe that the evolution of non-proliferation would escape this rule. Remember what I said earlier about the evolution of the 1945-1999 period. The Fifties were relatively quiet, the early Sixties saw the Cuban crisis and the Chinese bomb but the late Sixties culminated in the hope generated by the NPT signature. The mid-Seventies were marked by the first oil crisis, the Indian explosion and the creation of the NSG. By contrast, the Eighties were relatively quiet until the end when the Eastern bloc disintegrated and the Iraqi programme came to light. The Nineties so far have been pretty encouraging, except for last year's nuclear tests in Asia.

The conclusion I draw from all this is that although the past may not be the key to the present, it is regrettably reasonable to expect another crisis in non-proliferation within the next 10 years or so. What can be done about it?

First and foremost, we have to remember that proliferation is a political problem, to be solved by political means. Technical approaches are useful but they will always remain complementary and will not resolve the issue. I think, therefore, that, without neglecting the technical approach, we (the world community) should place more emphasis on political solutions. How should we do it? I know, of course, of various disarmament efforts in the context of the United Nations, but to quote Jean Cocteau: "The older I get, the more I see that what does *not* vanish are the dreams." And therefore, ... I dream.

I dream of a multilateral non-proliferation convention, agreement or treaty that would draw on our experience of the last 50 years. I remember, too, that treaties and conventions are not the fact of States or even of their governments, they are the culmination of individual efforts. One person has stood at the start of each one of them and has subsequently been followed by others.

I dream of a unified text that would avoid any discrimination between NWS and NNWS, between industrialized and less industrialized countries, a text that would:

Foster cooperation in the peaceful use of nuclear energy;

Incorporate nuclear export and import controls; and

Provide for sanctions for non-compliance.

I dream of a treaty that would supersede the NPT, the NSG, the Zangger Committee and would be superior to them all.

Rather than trying to patch up the present system and play with existing structures, I believe that we should start afresh and use our collective experience to write a better treaty. This will require hope, persistence, stubbornness even, patience, conviction, confidence, diplomacy and perseverance – plenty of perseverance. Remember that the Irish efforts towards a non-proliferation treaty were only successful at the fourth attempt.

For the time being, the present system is adequate. I am convinced, however, that a better model can be found and that it will be found if we all set our hearts and our minds to it and if we take advantage, to get started, of the relatively calm period that we are living in. When this new treaty has been signed and ratified by enough States, nothing will stand in the way of a smooth transition from the old system to the new.

I know that in the 1st Seminar in 1997, Ambassador Patokallio of Finland warned against reinventing the wheel and against trying to replace the NSG by some other system. "If you cannot beat them, join them!" he said. These are wise words indeed, but to find out if you can beat them or not, you first have to try. Let us give it a really good try and remember that even the turtle would not move forward if it did not stick its neck out.

### *Biographical information*

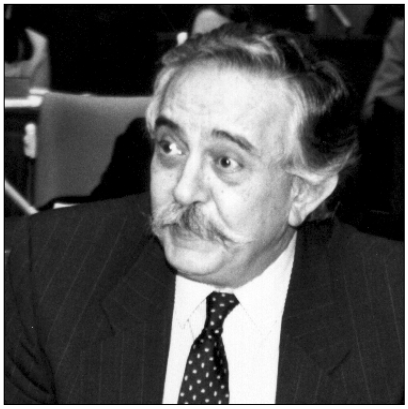
*In an earlier part of his career, Professor Baer worked as a geologist in Canada, before becoming university professor and later Dean of the Science and Engineering Faculty at the University of Ottawa.*

*He returned to his native Switzerland in 1985 as vice-director of the Federal Office of Energy. As such, he was for 10 years in charge of nuclear export controls for his country. He has also been a vice/chairman of the Steering Committee of the NEA/OECD (Organization for Economic Cooperation and Development), a member of the Board of Governors of the IAEA, chairman of the NSG and president of the General Conference of the IAEA. He was also a member of the Swiss Delegation to the 1995 NPT Conference.*

*More recently, he has chaired the Expert Group that drafted the Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management and has been a member of INSAG, the International Safety Advisory Group of the IAEA.*


CTBTO

*Miguel Marín-Bosch*



# A Commentary on the NSG and its Time

## Introduction

Let me preface my remarks with a few personal observations. When I joined the Mexican Foreign Service, the Treaty of Tlatelolco and the Treaty on the Non-Proliferation of Nuclear Weapons (NPT) had just come into force. By a quirk of fate I devoted myself mostly to multilateral affairs and disarmament. My diplomatic career has been closely linked to both treaties. That is one reason I enjoyed Professor Baer's reflections on the evolution of nuclear non-proliferation issues over the last 25 years.

My second observation is also personal. Like the signatories to the Tlatelolco Treaty and the NPT, I too believed in the promise of nuclear energy. The provisions regarding the peaceful uses of nuclear energy, including peaceful nuclear explosions (PNEs), seemed to me appropriate (although, occasionally, I referred to them as the "Santa Clauses"). Dr. Blix can attest to my defense of those provisions during the drafting of the annual General Assembly resolution on the International Atomic Energy Agency's (IAEA) report and during the efforts to convene the Peaceful Uses Of Nuclear Energy (PUNE) Conference, which was never held. But with time, I began to have doubts and I have come almost full circle. I am no longer convinced of the benefits – real or potential – of nuclear energy. I am not yet totally green, but I am getting there.

A third and final preliminary remark is that the subject of this Seminar was not my primary concern at the various NPT conferences. I dealt mostly with the items assigned to Main Committee I, the disarmament issues handled mostly by Geneva-based representatives. Rarely did I attend the meetings of the "other" committees, which were covered by Vienna-based diplomats. I hope, therefore, that you will forgive my Geneva bias as well as my limited knowledge of these matters.

## Historic parallels

What strikes me about the Nuclear Suppliers Group (NSG) is how its history parallels that of the NPT. The NPT was largely the product of an agreement among the Soviet Union, United Kingdom and United States aimed at limiting the number of nuclear players. It was not a consensus treaty, as one might expect a multilateral disarmament treaty to be today, because it was not very popular in certain circles, especially among those countries to which it was addressed. One need only recall the reactions of Italy, Switzerland, the Federal Republic of Germany and Spain, as well as India, Pakistan, Argentina and Brazil.

Despite its many shortcomings, it eventually garnered support, even from such unlikely quarters as China and France. Today, it is almost a universal treaty and one of its outstanding problems is what to do about the three *de facto* nuclear-weapon States (NWS) that remain outside it. The NPT must also demonstrate the effectiveness of the non-proliferation regime it symbolizes, a regime that has been undermined in a number of instances, including the case of Iraq. More importantly, now that the NPT has been extended indefinitely, it should become a treaty that its members not only continue to uphold, but feel comfortable doing so. And to ensure the latter, the NWS must change their attitude towards their own arsenals and nuclear disarmament. Unfortunately, today they are under less pressure to do so than they were before 1995. Having managed – with relative ease, one would think – to round up almost all of the threshold States, as well as China and France, the three depositories campaigned vigorously and successfully for the NPT's indefinite extension. Now they are in no rush to fulfill their "obligation to pursue in good faith and bring to a conclusion negotiations leading to nuclear disarmament in all its aspects under strict and effective international control" (International Court of Justice Advisory Opinion of 8 July 1996). History has shown them that, despite initial resistance to the NPT, they were right to wait it out. Similarly, history has shown that the patience of the NSG's founders has also been rewarded.

The NSG was established to prevent the transfer of sensitive nuclear technologies and equipment. India's explosion of a "peaceful" nuclear device, together with the growing (and lucrative) trade in nuclear supplies, moved a group of nuclear-exporting countries to establish a set of guidelines for such transfers. Although the NSG supposedly met in secret in 1975, news of its existence soon surfaced and caused concern among the potential recipients of sensitive technologies as well as among other suppliers not invited to those initial meetings. Like the NPT, the NSG grew and eventually included countries that were once only importers of those technologies and equipment. Just as NPT parties today include nations that once declared they would never join such an "unequal" and "discriminatory" treaty, so NSG membership now comprises countries that a decade or so ago decried the export controls they now espouse.

In a way there is nothing strange about the NSG. Countries have been coordinating their positions on international issues for years. Groups have organized themselves in different ways and for different reasons. And export control regimes are an example. With the advent of the Cold War, the United States established in 1949, together with its Western allies, the Coordinating Committee for Multilateral Export Controls (COCOM) for the purpose of ensuring that advanced military technologies did not end up in the hands of the

Soviet bloc. Today the purpose and membership of COCOM has changed radically and it includes countries of the former Soviet bloc and more.

The problem with the NSG is that many outsiders perceived it as an attempt at limiting the NPT provisions regarding international cooperation in peaceful uses of nuclear energy. But as NSG membership grew (and the world changed) it was more and more difficult to oppose it openly, and thus the calls for greater transparency. Is *glasnost* the solution? I think Professor Baer's three points regarding the difficulties facing the NSG in 1999 are well taken: first, growing economic liberalization and the role of non-State agents; second, the proliferation of export control regimes and how individual States coordinate their participation in them; and third, the shortcomings of periodic revisions of the lists of items.

## Situation more complicated

I also agree with his reflections on the nuclear non-proliferation situation. Those reflections are far from outrageous. What is more, I agree with his proposal (he calls it his "dream") to "start afresh and use our collective experience to write a better treaty." Here are some of my own thoughts in this regard.

The situation regarding the non-proliferation of nuclear weapons is today much more complicated than it was 10 or 20 years ago. The technology for their manufacture has been improving and what was once the monopoly of one, later two, three and eventually five nations has now become accessible to many. What you invent today to enhance your security has a tendency to reappear later elsewhere as a threat. The development of different and more sophisticated weapons and weapons systems has a way of boomeranging. They seem to offer security until they are developed by others. The cycle then repeats itself.

Most would agree that the achievement of an internationally safeguarded nuclear-weapon-free world would have been a lot easier at the end of 1945 than it is now or will be in the next century. The nuclear non-proliferation agreements of the last 30 years have been one way to approach the problem. The idea that one must limit the number of players has also been pursued through export control regimes, such as the NSG. But in the nuclear field, the problem of curbing technology transfers has been greatly complicated over the last decades by the emergence of more and more suppliers of nuclear technologies. The NWS have long lost their monopoly in this regard. A 1988 study predicted that by next year there would be around 40 countries technically capable of producing nuclear weapons (*Discriminate Deterrence*, Report of the Commission [co-chaired by Fred C. Iklé and Albert Wohlstetter] on Integrated Long-Term Strategy, Washington, D.C.: GPO, 1988). And that prediction has probably proved correct. History is full of examples of technological advances spreading in the most unexpected ways and the story of nuclear proliferation is a prime example.

The question of the proliferation of weapons of mass destruction and their delivery systems in all its aspects is the most important item on the multilateral agenda. And yet countries refuse to tackle it in an honest, comprehensive way. They continue, as Professor

Baer notes, to attempt to patch up the present system. They do so by trying to bolster the verification system of the Biological Weapons Convention. And they do so in the nuclear non-proliferation domain.

Witness what happened at the 1995 NPT Review and Extension Conference. Nation-States rarely have the opportunity to sit down and examine together issues of fundamental importance for the well being of all. Like the United Nations (UN) General Assembly's special sessions devoted to specific items or the world conferences on various topics, the 1995 NPT Conference was one such rare occasion. Yet it was different from other NPT Review Conferences and other UN-sponsored conferences in that its results were bound to have a direct impact on the question of nuclear weapons for decades to come. And yet there was no real discussion of substantive matters except for the question of extending the NPT indefinitely. There was agreement to enhance the effectiveness of the review process. But this is not yet reflected in the work of the Preparatory Committee for the 2000 Review Conference.

## Rethinking

The NPT and the nuclear-non-proliferation regime in general are in need of serious, collective rethinking. Perhaps this will lead to nothing but it must be attempted. And here are some reasons for doing so. How long is the international community willing to continue applying a double standard in matters of nuclear proliferation? In the UN General Assembly's most recent resolution (53/21) on the IAEA's report, there are, as in past years, clear and unequivocal references to the Democratic Peoples Republic of Korea (DPRK) and Iraq, yet weak and ambiguous references to Israel. In the resolution on the "Role of science and technology in the context of international security and disarmament" (53/73) the UN General Assembly urged "Member States to undertake multilateral negotiations with the participation of interested States in order to establish universally acceptable, non-discriminatory guidelines for international transfers of dual-use goods and technologies and high technology with military applications." All but 7 of the 33 NSG members that are also UN members voted against that resolution. How does this square with the pertinent provisions of the NPT?

How much longer shall we continue to ignore that the international situation is not a static one? Have we not accepted that the five permanent members of the UN Security Council are perhaps no longer representative of the world's present distribution of power – military, economic and political? Should we not face the facts and stop pretending that nuclear proliferation ended in the late Sixties? UN Members are adept at finding euphemisms. In UN-ese, India, Israel and Pakistan are now referred to as "those three States that are nuclear-weapons capable and that have not acceded to the NPT." When referring to these NPT "holdouts," the European Union only mentions India and Pakistan by name, and urges them to adhere to the NPT "as it stands," i.e., as non-nuclear weapons States (NNWS) (statement to UN General Assembly First Committee, 12 October 1998). The United States follows a similar tack and also remains silent regarding Israel. The United States has also called on all States to "cooperate with export control regimes to prevent proliferation of mass destruction weapons and their delivery systems" (statement to UN General Assembly First Committee, 14 October 1998). These regimes include the NSG.

Such attitudes and measures are not conducive to the harmonization of efforts to prevent the proliferation of nuclear weapons. Taken in isolation from the broader concerns of international peace and security and implemented in an environment where non-State commercial interests are prevalent, export control regimes appear simply as an exercise in technology denial, an exercise doomed to failure.

What we must seek in the next century is a genuine, non-discriminatory nuclear non-proliferation regime. For this the international community – including all *de jure* or *de facto* NWS – should begin an honest and constructive dialogue on all aspects of the question, including export control regimes and disarmament. The present nuclear non-proliferation regime should be overhauled. Tinkering with its various components may buy us time but the long-term solution lies elsewhere.

### *Biographical information*

*A career diplomat, Ambassador Marín-Bosch entered the Mexican Foreign Service in 1969 and was promoted to Ambassador in 1979. In 1994 he was appointed one of ten Eminent Ambassadors. As a member of the Delegation of Mexico, Ambassador Marín-Bosch has participated in over 80 international meetings including the United Nations General Assembly, the Economic and Social Council, the Commission on Transnational Corporations, the Disarmament Commission, the conference on Disarmament, the Commission (and subcommissions) on the Peaceful Uses of Outer Space, the Conference on the Reaffirmation and Development of Humanitarian Law Applicable to Armed Conflicts, the Review conferences of the Treaty on the non-proliferation of nuclear weapons and the Preparatory Commission for the Organization for the Prohibition of Chemical Weapons.*

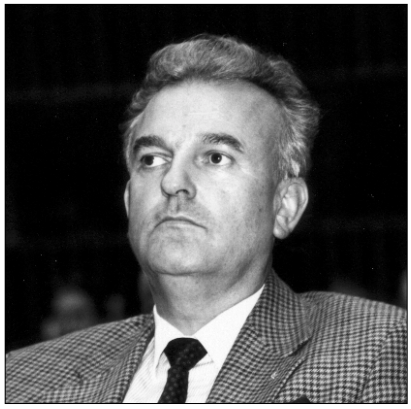
*He has served, among others, as: Rapporteur of the First Commission of the Conference on the Reaffirmation and Development of Humanitarian Law Applicable to Armed Conflicts (1974); Chairman of the special sessions of the Commission on Transnational Corporations charged with the drafting of a code of conduct on those corporations (1984-1989); Chairman of the Ad Hoc Committee charged with initiating the negotiations on a comprehensive nuclear test ban treaty (Conference on Disarmament, 1994); and Chairman of the Preparatory Commission for the Organization for the Prohibition of Chemical Weapons (August 1994-February 1995).*

*Ambassador Marín-Bosch is currently the Consul-General in Barcelona and teaches at the Universitat Pompeu Fabra. He has written several books on history and international relations and numerous articles on the subject of nuclear proliferation and disarmament.*

*Ambassador Marín-Bosch received his undergraduate degree at Yale and his M.A. and Ph.D. from Columbia University.*


IAEA

*Fritz Schmidt*



# Zangger Committee

## Introduction

When we talk about transparency we always have in mind the wish of the NPT Review & Extension Conference (NPTREC) 1995 which, in its Principle 17, demanded transparency, particularly in export controls, to make the criteria for cooperation more understandable and predictable. This, of course, goes as much for the Zangger Committee as for the Treaty on the Non-Proliferation of Nuclear Weapons (NPT) Exporters Committee.

The Keynote Speaker, Professor Baer, has dealt with the history of the NSG. Professor Baer comes to the conclusion that we should have a new NPT. I am not convinced about that because there is so much in the NPT that has not (not yet) been exploited and I will give you examples of that in this presentation. There is some evolution in the work of the Zangger Committee which provides evidence for this observation. What I do not touch on here is the whole complex of Article VI which, with its "daughter" agreements, opens up a wide area of implementation that has not yet been exploited. I therefore wonder why we might need a new Treaty.

The same goes for remarks made by Dr. Blix, the chairman of this Seminar who, in his introductory remarks, referred to IAEA "full-scope safeguards" and, as a separate issue, to the area of export controls. I shall explain how it is possible and necessary to bring these two areas together or even merge them to a certain extent in the future.

## Questions to be answered

As I have been invited to talk to you as the chairman of the Zangger Committee, I would like to present to you answers to questions such as:

- ***When and why was the Zangger Committee created?***

I may in this context touch upon the question why, in my memory, the London Group, later called the Nuclear Suppliers Group, was created, and in what way it differs from the Zangger Committee.

- ***Why was the Dual-Use Regime created?***

Do we need it forever or can we forego it at some time in the future without reducing and endangering non-proliferation goals and our global security interests? If we can, how would that happen? As a quick forecast: It can only be a long-term concept. The mechanism through which we may achieve this goal is the IAEA's new Integrated Safeguards System.

Let me begin my lecture by explaining and repeating what the basis for nuclear export controls is. To understand NPT export controls it is necessary to look at Article III of the NPT in its entirety.

## Article III

There is an important message in this Article: It is the principle of the *universality of full-scope safeguards***.** That means to bring all NNWS under the full-scope safeguards (FSS) regime of the International Atomic Energy Agency (IAEA):

Through Article III.1 those who become Parties to the Treaty; and

Through Article III.2 (export controls) all the others, who did not join the Treaty. They shall also be brought to IAEA-FSS as a condition of supply (COS).

*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.*

Any other interpretation would simply mean that the drafters of the NPT had wanted to give a privileged treatment to non-parties to the NPT, by granting them cooperation with less severe verification requirements. As the clause "safeguards required by this article" refers to Article III and the only kind of "safeguards" required in Article III are those applied by the IAEA to Parties to the Treaty, this clause clearly refers to FSS.

A side remark: The future of the acceptance of an "Exporters Committee" with the task of interpreting the NPT Article III.2, is highly dependent upon the understanding that FSS is a clear condition of supply for all countries and thereby provides equal treatment for all States, parties and non-parties.

## List of goods

Besides the safeguards requirement as a condition of supply, Article III.2 contains a reference to particular goods which shall be subject to export controls (licensing and verification).

As the clause "items especially designed or prepared" (EDP) was rather generally phrased, those member States of the NPT who were regularly involved in the supply of EDP items came together to exchange views, learn from each other and harmonize their understandings.

## History of the Zangger Committee

This was the origin of the Zangger Committee, which had its first meeting on 11 March 1971 shortly after the Safeguards Committee 1970 of the IAEA had finished its work for the NPT full-scope safeguards model (INFCIRC/153).

The Zangger Committee was formed by supplier countries that had to decide how to interpret the rather generally drafted export control obligation in the NPT. They elaborated a list of goods, called the "Trigger List" any export of such items "triggers" safeguards) and defined procedures and conditions under which nuclear exports would be licensed. These "Understandings" of the Zangger Committee, ready in 1972, were published in September 1974 as IAEA document INFCIRC/209 and the Trigger List has been amended several times since then.

The first Trigger List of 1974 contained the following items:

1. Nuclear material
1.1. Source material
1.2. Special fissionable material
2. Reactors and equipment therefor
2.1. Reactor fuel charging and discharging machines
2.2. Reactor control rods
2.3. Reactor pressure tubes

2.4. Zirconium tubes
2.5. Primary coolant pumps
3. Non-nuclear materials for reactors
3.1. Deuterium and heavy water
3.2. Nuclear grade graphite
4. Plants for the reprocessing of irradiated fuel elements, and equipment especially designed or prepared therefor
5. Plants for the fabrication of fuel elements
6. Equipment, other than analytical instruments, especially designed or prepared for the separation of isotopes of uranium

Since 1974 the list has been continuously reviewed and amended accordingly:

1. In November 1977: adding heavy water production equipment and a clarification on Zirconium;
2. In February 1984: taking account of the technological development in the area of isotope separation by the gas centrifuge process;
3. In August 1985: clarification on reprocessing plants;
4. In February 1990: a clarification on isotope separation plant equipment from the gaseous diffusion method;
5. In 1994: a further clarification to the enrichment section and a modification of the entry on "Primary Coolant Pumps" (to include "Water Pumps") and the same year an understanding was reached about the safeguards procedural management of bulk quantities of source material for non-nuclear use.
6. In 1996: a further clarification of the less sensitive Trigger List items (Sections 2 and 5); publishing was delayed and will be carried out very soon.

The Committee agreed to exchange information about actual exports or issue of licenses for exports to any non-nuclear-weapon State (NNWS) *not Party* to the Treaty through its system of "Annual Returns," which are circulated on a confidential basis among the membership each year in April. These annual reports have sometimes been the source of misinterpretation, i.e. that the Zangger Committee would only apply to exports to NPT non-parties. But the Treaty is clear – export controls apply to all NNWS. For States parties having FSS agreements with the IAEA in place, the "verification" criterion may not be relevant, but the question as to whether they accept the Trigger List as the list of items that trigger an identical set of criteria in case of re-export has to be answered positively before such transfers can be permitted to a NNWS, regardless of whether it is a Party to the NPT or not.

To complete my brief overview of history that affected the development of export controls, see the following timetable:

| | |
|---|---|
| 1974 | Indian nuclear explosion |
| 1975 | Convening the London Group |
| 1978 | London Guidelines |

| | |
|---|---|
| Since 1978 | Zangger Committee continues the Trigger List work also for the London Group; (several amendments to the Trigger List) |
| 1991 | Iraq event |
| 1992 | Creation (revitalization) of NSG |

The "nuclear explosion" in May 1974 by India not only caused a tremor in the earth but also in the foundations of the non-proliferation regime. Was the NPT inappropriate, inadequate or even a failure?

India was not an NPT Party, and the Treaty was still too young to be blamed for not being able to prevent a technology transfer from an NPT Party. But the explosion led to increased concern about the conditions on which nuclear exports were being made. Following preliminary consultations in 1974, seven major supplier countries met in 1975 with the goal of defining what – if any – additional conditions of supply should be added to those in the NPT and the Zangger Committee memoranda, which were (a) non-explosive use assurance, (b) safeguards and (c) retransfer provisions.

These States established in 1977 a set of guidelines and criteria known as the "London Suppliers Guidelines," which identified two further criteria for conditions of supply:

To apply measures in the recipient state for the *physical protection* of nuclear material and facilities on the basis of the recommendations published in IAEA document INFCIRC/225;

To agree that any facility in the recipient State that was built on the basis of the know-how of the supplied technology ("know-how clause"), would be put under safeguards.

A further element in these undertakings was that the guidelines of the London Group introduced for some equipment the term "more sensitive facilities," for which a transfer of technology should be handled particularly cautiously.

With the technological development that has taken place since the year 1974, the Trigger List has undergone remarkable changes. In certain areas the list was rather roughly structured and only referred to "complete" facilities but it was understood at the time that this would be enough to hinder clandestine developments in certain countries.

The Zangger Committee has constantly been engaged in monitoring the need for revisions or further clarifications of Trigger List items. The original Annex has therefore grown considerably. To summarize these developments it is fair to say that the Zangger Committee has devoted its efforts mainly to adding structure and detail to the Trigger List.

Since the publication of its Guidelines in 1978 the London Group did not see a necessity to meet, relying on the Trigger List developments carried out by the Zangger Committee.

When the Nuclear Suppliers Group (NSG) was created in 1992 an early priority of that newly created body was to harmonize the old London Group Trigger List of 1978 with the current list of the Zangger Committee.

As a side-remark it is worth mentioning that the NSG's creation or revitalization, as some call it, was influenced by a second area of the non-proliferation regime, the so-called "dual-use" items. While the Zangger Committee and the London Group only dealt with nuclear items "with a major nuclear use," the NSG established a list of commodities characterized by their major conventional utilization, with a certain importance for nuclear applications. This list, which was established by the NSG, hence became known as the "nuclear related dual-use list."

Different from the Zangger Committee, the NSG from its very beginning aimed at attracting all supplier countries whether or not they were members of the NPT.

The cooperation between NSG and Zangger Committee works well. To avoid duplication of work, the NSG Plenary in Buenos Aires in 1996 clarified the question of cooperation in the way 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.

There was until recently only one area where the two lists differed, i.e. "conversion" technology. The Zangger Committee took up that question and has been working on a clarification for "conversion" equipment. There were two questions to be resolved:

1. *Technical*: which equipment should be put on the list; and
2. *Legal*: whether conversion fits into the framework of Article III.2 of the NPT and the mandate of the Zangger Committee.

In February this year a technology holders meeting in Vienna achieved the break-through after a long stalemate and we await the next Zangger Committee plenary in May 1999 to put it into effect.

## Method of work

One of the advantages in the work of the Committee is that it avoids the "plenary approach" for initiatives. It is up to the technology holders to take the initiative for consideration by those who understand which goods are of major relevance for the nuclear fuel cycle and should therefore be subject to export controls or removed from the list should controls no longer be necessary.

Such technology holders' consultations usually are initiated outside the Committee and therefore do not take up the time of other Committee members. It is only when the discussions produce results that they are brought to the Committee for discussion in the plenary.

A lot of work is done between sessions; thus, two formal meetings per year suffice to keep all members up to date and enable them to make the necessary decisions. The Committee has a Chair with an indefinite term of office and a Secretary. The Secretary is from the UK Mission to the IAEA in Vienna.

I do not intend to go too deeply into the question as to why there is both a Zangger Committee and an NSG. That has been the subject of long discussion. Let me just state here that there are good reasons that have significance not only for the members of the two groups (NSG/Zangger Committee) but also for the membership of the NPT as a whole and are as follows:

The Zangger Committee is recognized by NPT States as a faithful interpreter of Article III.2. Its interpretation work (i.e. the Committee's Understandings) shall serve as minimum guidance for any export from any NPT Member State, regardless of whether this State is a major supplier or not.

The Zangger Committee maintains the Trigger List, the basis for the list in Annex II of the IAEA Add.Prot. (INFCIRC/540).

Any further development should be harmonized with the IAEA.

The NSG focuses on the Dual-Use Regime, a "relative" system, which may lose its current importance once the IAEA has developed its capabilities in the new integrated safeguards system (ISS).

Let me conclude this general history part with a particular remark: In the many reflections on the history of the London Group, later called the NSG, I always felt that a not unimportant element of the considerations in the mid-Seventies was missing. It relates to the question as to why, after the establishment of the London Group, the Zangger Committee continued to function. The answer to this is the decision taken by the Committee members that the Zangger Committee should continue its work as interpreter of the NPT export control requirements and therefore strictly stay within the legal framework of the NPT. The London Group should function as an instrument responding to challenges to nuclear non-proliferation, even if it goes beyond the framework of the NPT. The London Group was designed to respond quickly and flexibly, and it should take decisions opportunistically to protect the non-proliferation goals.

## Introduction of the nuclear related Dual-Use Regime (DUR)

Starting in 1971, Zangger Committee members developed a Trigger List considered to be sufficient to control all nuclear transfers necessary to build a nuclear programme in a recipient country. The IAEA, through its safeguards programme, controlled declared nuclear material. This was considered to be a sufficient level of safeguards.

The events in Iraq were evidence that such control measures were not realistic enough. The IAEA controlled all declared nuclear material but had practically no right to look into other elements of the nuclear programme, such as nuclear R&D, production capabilities for nuclear items or transfers of nuclear items into and out of Iraq. (In the case of Iraq it was the "in" rather than the "out" that would have been of interest).

The revelations after the Gulf War triggered two major programmes of reaction.

The first reaction, to be implemented in the short term, was the introduction of export controls of dual-use items, items which are, in principle, for conventional industrial purposes but can also be used in the nuclear fuel cycle. Therefore they are called "nuclear related dual-use items."

The long-term programme related to a review of the design of the IAEA safeguards system to better cope with the lessons learned from the Iraqi case. This action became known as Programme 93+2, and its aim was to strengthen the effectiveness and improve the efficiency of Agency safeguards – now better known under the new term "integrated safeguards."

As the nuclear related Dual-Use Regime comes in for criticism from a great number of recipient or potential recipient countries, it is necessary to justify why we have the Dual-Use Regime. This will be done during this Seminar by other speakers. What I want to focus on in my presentation is that, necessary though the Dual-Use Regime currently is, it nevertheless is only a transitory system. What does transitory mean in this context?

It means that if we are able to develop the long-term programme, the IAEA's integrated safeguards system, and thereby prepare the IAEA to take over part of the security functions currently implemented by Supplier States, we could reduce or even give up the Dual-Use Regime. As described above, it was conceived as a short-term measure.

Let me explain how I see the function and role of the IAEA in export controls. At present, according to Article III.2, the supplier State has two tasks:

Task 1: To implement the sovereign obligation and decide upon export licenses, and make sure that all requirements will be fulfilled in the recipient countries (Government-to-Government Assurance). The criteria for these requirements are clarified, harmonized and agreed upon in exporters' groups like the Zangger Committee and the NSG.

Task 2: To make sure that the item, once it has crossed the border, will be used properly in the recipient country.

In future, the responsibility for the two tasks can be allocated differently. While for Task 1 the exporters groups will continue their work in the usual way, e.g. by exchanging information among members, by reviewing their criteria or by adopting amendments to the Trigger List, Task 2 can be moved to the IAEA once the necessary means of implementation are in place.

In other words, the IAEA Secretariat in the future will have a clear function in export controls once the exported item has crossed the border. The role of the IAEA will be to help to lessen the (often politically motivated) tensions between suppliers and recipients. Recipients may claim not to be able to accept the interference of other States in their sovereign national programmes as NPT parties.

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. That has been confirmed by the last NPT Conference.

As the Agency's new ISS, as laid down in the Additional Protocol (INFCIRC/540) in connection with the NPT based full-scope safeguards system (INFCIRC/153), gives the IAEA a new expanded mandate in safeguards, the organization has all the legal means to take over the new role in export controls once the item in transfer has crossed the border.

The Additional Protocol in Art. 2a(ix) entitles the IAEA to receive information on all exports and imports of items listed in its Annex II, which is and should remain the Trigger List.

Evidence for the will of the NPT Member States that the IAEA should play an important role in export controls can be read from Decision 2 of the NPT Review & Extension Conference (NPTREC) 1995, the document on Principles and Objectives guiding the future implementation of the Treaty. In particular Principles 9 and 11 stipulate the following:

> ***Principle 9***
> *The International Atomic Energy Agency is the competent authority responsible to verify and assure…compliance with the safeguards agreements…under article III, paragraph 1 of the Treaty … 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…by other 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.*
>
> ***Principle 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 should be urged to enter into comprehensive safeguards agreements with the Agency.*

These two principles were complemented by Principle 12 on FSS as a COS, which reads:

> *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.*

These three Principles – in connection with the Additional Protocol – enforce the role of the IAEA also 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.

Based on these considerations it is fair to say that the Additional Protocol is an important step in the implementation of the results of the NPTREC 95 and at the same time it improves the design and in particular the scope of those safeguards, which the drafters of the NPT had in mind. Once the Additional Protocol is in place there will be sufficient basis for the IAEA to share tasks in export controls between the Member States and the IAEA.

- ***Why should we think about a new system, and what can States do to enhance its development?***

Let me summarize the answer to that question in the following way: over the years non-aligned movement (NAM) countries as recipient countries have expressed concerns that suppliers interfere in their sovereign nuclear programmes. Therefore in the NPTREC 95 the idea was presented that export controls should be internationalized. As expressed on several occasions previously it is my opinion that this proposal of internationalization could not be taken over one by one but would require careful analysis.

There is no doubt that the licensing part of export controls is a sovereign right and obligation of each individual State. This can not be internationalized without affecting the Treaty. But if and when, after careful scrutiny, applications for nuclear export licenses have been positively decided and licenses have been issued, and when the items have crossed the border, it is understandable that there might be misgivings on the part of recipient countries if suppliers continue to interfere with the sovereign programme of the recipient country. At the same time it is generally understood that a sufficient level of security is needed to make sure that transferred nuclear items are used only for peaceful purposes in the recipient country and will not be diverted for a clandestine activity.

As control and verification is needed, the only question that remains is: who should do it? The response is rather clear: It should be an international, independent and impartial organization; and the organization that has been proving over the past decades that it is able to meet these particular qualifications is definitely the IAEA.

Following the developments in IAEA safeguards in recent years one could see that Programme 93+2, from the beginning, observed that the particular requirements and conditions for transfer controls are taken care of in that programme.

There are two principal requirements:

To provide the IAEA with sufficient information to enable it to achieve a clear understanding of the status of the nuclear program of a given State; and

To make sure that this information includes all transfers to that State to see what additional equipment and material has been received by that State and was introduced in its nuclear programme.

As these requirements are met on paper in the model Additional Protocol (INFCIRC/540) we have to make sure that the Additional Protocol is concluded by all NPT countries and put into force in line with their Article III commitment. This among other things should be taken care of in the preparations for the NPT Conference 2000.

What is to be prepared for the NPT Conference 2000?

1. On Principle 11, NPT Member States should take a clear position that the Additional Protocol is not just a further legal instrument but a logical addition to and an *integral part* of the existing NPT safeguards system. Consequently it has to be seen as a logical expansion of the obligations in the NPT Article III.1 and the conclusion of it should *not* be considered optional. States party should be urged to adhere to it.
2. NPT Member States should follow Principle 12, which clarified for Article III.2 that full-scope safeguards shall be a condition of supply for exports of Trigger List items.
3. The IAEA should develop the necessary mechanism to be able to digest the new information in an integrated and cost-efficient manner. The role of enhanced information treatment is important for the IAEA to acquire its own intelligence capability to be as independent from outside skills as possible.

## The role of the Zangger Committee in the future

As chairman of this Committee let me at the end of my talk elaborate briefly on the question: What remains for the Zangger Committee to do?

1. The Committee will continue to review the Trigger List and to harmonize its results as in the past with the NSG.
2. It will try to clarify its Understandings to reflect FSS/COS.
3. It will clarify the possible form of cooperation between the Zangger Committee and the IAEA in connection with Annex II of the Additional Protocol *(as the Trigger List has become an element in the Additional Protocol, review activities in the Committee have to observe this relation; e.g. when the Zangger Committee is amending the list, it should be in touch with the IAEA Secretariat on its technical considerations to facilitate synchronization with the process foreseen in the Board of Governors).*
4. It will prepare an information document on the objectives and work of the Committee, similar to the one presented in the 1995 NPT Conference.

To conclude, I would like to emphasize that the Zangger Committee has to prepare properly for the NPT Conference 2000, not just to achieve the same good acceptance as in

1995 but also to be responsive in the light of the enhanced review mechanism, which will include a screening of Principle 12 (FSS/COS).

### *Biographical information*

*For over 25 years, Dr. Schmidt has been involved in nuclear non-proliferation matters in Austria covering safeguards, export controls, physical protection and illicit trafficking issues. He has the rare distinction of having participated in all NPT Conferences since 1975. Since 1986, he has been the Director for Nuclear Non-Proliferation in the office of the Austria Federal Chancellor. Last, but not least, he became Chair of the Zangger Committee in 1993, in which capacity he was invited to provide the first commentary to this session on the international nuclear non-proliferation regime.*

*Richard J.K. Stratford*

# The Practice of Export Controls: Effect on Trade and Peaceful Nuclear Activities

## Introduction

My premise here today is a simple one. Multilaterally agreed nuclear export controls do not inhibit the transfer of peaceful nuclear technology to other countries. They do not serve the purposes of a cartel. They do not stand in the way of encouraging the practical application of atomic energy for peaceful uses in developed and developing countries alike. Rather, such multilateral agreements make peaceful nuclear cooperation possible by providing an *agreed* interpretation of the fundamental bargain contained in the Treaty on the Non-Proliferation of Nuclear Weapons (NPT), i.e. the fullest possible exchange of nuclear equipment and technology, provided subject to the safeguards system of the International Atomic Energy Agency (IAEA) and subject to the NPT's obligation not to acquire nuclear explosive devices. And no, I have not forgotten that the NPT also places an obligation on the nuclear-weapon states to pursue negotiations in good faith on cessation of the nuclear arms race and on nuclear disarmament.

## Back to basics

From time to time in my business, I am faced with complex issues that raise a number of problems or are otherwise difficult to deal with. Frequently, someone else has prepared a written analysis of the issue and reviewed various options, setting forth his or her view of the pros and cons of each option. After reading the options paper several times, one wonders which is really the right course to follow. When that happens, I sometimes stop and tell myself to go back to basics, to reduce the problem to its simplest form, and then to find the *simplest* and most *practical* way of dealing with the problem. It's a kind of Occam's razor approach to foreign policy.

With that in mind, let's think back to the days after World War II. At that time, the United States was just beginning to explore the potential for peaceful uses of atomic energy.

By the early 1950s, the United States was pursuing the generation of electricity through the use of nuclear energy, initially in our naval nuclear submarine program. It was also clear that nuclear energy had the potential for peaceful uses in agriculture, medicine and industry. But if the rest of the world were to take advantage of those peaceful uses, there would have to be a substantial transfer of nuclear technology and equipment – and such transfers were absolutely prohibited by U.S. law.

So, the first question. Is a nuclear embargo a sensible policy? Answer: "no," because information cannot be locked up forever, nor should it be if it can make a substantial contribution to human prosperity. In 1954, therefore, the United States did a "180 degree turn" and rewrote the Atomic Energy Act to permit the export of nuclear equipment, fuel, and technology under appropriate controls. Now, without thinking about what decisions the United States made at that time, let's ask ourselves the question, "What should a nuclear non-proliferation regime look like"?

Well, the first thing you would want is a bilateral agreement with the recipient State in which you get certain assurances and controls. You would want the recipient to promise that the transferred items would be used solely for peaceful purposes. You would want those items to be properly protected, i.e. that appropriate physical security would be applied. You would want a consent right over their retransfer to a third country. Most importantly, you would want the right to verify that the transferred items were being used in accord with your agreement. So, you would reserve the right to visit the transferred material and you would require the recipient State to account for it. And in fact, the first part of the nuclear non-proliferation regime is the series of bilatera1 nuclear supply agreements that countries sign with each other.

As supply arrangements between States became more common, it would occur to you that having inspectors from a half dozen different suppliers visiting your nuclear facilities is not an effective way to manage a nuclear energy program. So the second thing you would want is some centralized verification mechanism. It was partially for this reason that the IAEA was created. Not just to provide a mechanism for fostering the transfer of the peaceful uses of nuclear energy, but to relieve States of the burden of checking on their own exports. In other words, if the IAEA verification mechanism didn't exist, then nuclear supply either would not take place or it would take place under a redundant and inefficient system of bilateral safeguards. Such a circumstance would actually work against the transfer of nuclear technology by making it less attractive to recipient States.

The third thing you might want is a type of assurance that goes well beyond simply promising not to misuse *your* export. If you are opposed to nuclear proliferation, you might want the recipient State to promise that it will never acquire nuclear weapons at any time from any source. You also might want that assurance contained in a treaty commitment, preferably one that establishes a global norm. Hence, the development of the NPT, as well as the regional nuclear weapons free zones created pursuant to the Treaties of Tlatelolco, Raratonga and Pelindaba.

Finally, over the years, it would become obvious that various suppliers may have differing views on what are appropriate conditions of supply. Should a treaty commitment be required? Are retransfer controls a *sine qua non* for a bilateral supply agreement?

Exactly what items should be considered subject to IAEA verification or should trigger verification at a particular facility? The last thing you would want is for another supplier to obtain a contract from a recipient State by promising to apply less stringent non-proliferation controls than your country requires. If you were faced with a situation like Iraq, you might also develop concerns that the kinds of controls in general use are simply not strong enough nor comprehensive enough to deal with a dedicated proliferator.

And this leads us to the essential fourth part of an effective nuclear non-proliferation regime, namely the creation of a forum where suppliers can come together to establish a common understanding on appropriate conditions of supply. The Zangger Committee, the first such multilateral effort, was formed to deal with the issue of precisely what did Article III of the NPT mean by "equipment or material especially designed or prepared for the processing, use or production of special fissionable material?" In other words, exactly what items "triggered" the application of IAEA safeguards."

The Nuclear Suppliers Group (NSG) was originally formed after the Indian nuclear test of 1974 to consider whether conditions of nuclear supply needed to be strengthened to better ensure that peaceful nuclear cooperation did not contribute to nuclear proliferation. Their answer to that question was "yes," and the NSG created a set of guidelines that included formal government assurances of peaceful use, physical protection measures, caution in the transfer of sensitive facilities, and a trigger list that went beyond the Zangger list. When the NSG began meeting again on a regular basis in 1991, it again took up the question of whether conditions of supply needed strengthening (this time largely in response to the situation in Iraq) and again the answer was "yes." This led quickly to controls over dual-use items, controls over nuclear technology (not just hardware), and a requirement that a recipient State have accepted comprehensive IAEA safeguards over its entire nuclear program, so-called "full-scope" safeguards.

Today the Nuclear Suppliers Group is an effective, mature multilateral regime. The 35 members work well together, and the NSG has been remarkably successful in reaching consensus on ways to strengthen the NSG Guidelines, the Trigger List, and the dual-use control list. But first I want to point out some things that the NSG is not.

First, the NSG is not a cartel. Restricting nuclear equipment and technology transfers *per se* is not our goal. Our goal is to establish a common understanding of the best conditions that all of us can apply that will foster cooperation in the peaceful uses of nuclear energy while assuring that such cooperation does not increase the risk of proliferation. Those are *exactly* the same two *complementary* goals that were established by the creators of the IAEA 42 years ago.

Second, the NSG is not a secret organization. The purpose of these seminars is to make clear exactly how the NSG works and how it arrives at its understandings on conditions of supply.

Third, the NSG is not a closed club. The membership is representative of East and West, North and South. It includes a country, i.e. South Africa that, until recently, had a nuclear weapons program, but renounced it and welcomed the application of IAEA full-scope safeguards. It includes countries, i.e. Argentina and Brazil, who for some time had reservations about the NPT, but are now Parties to the NPT.

Fourth, the NSG does not attempt to establish an embargo against any particular country. The decision on whether to approve a particular export is totally within the discretion of the exporting country.

## Effect on nuclear trade

I started this discussion with the premise that multilateral export controls do not inhibit the transfer of peaceful nuclear technology to other countries. I continue to believe this is the case. I think the discussion shows that nuclear suppliers today would be exceptionally reluctant to engage in nuclear trade, especially in light of the Iraq situation, unless there were clear "rules of the road" on nuclear transfers and unless they felt that those rules were an effective mechanism for controlling nuclear proliferation. But let's look at what's happening with respect to nuclear cooperation today.

First, with respect to Trigger List items, do multilateral controls discourage transfers? The answer is clearly "no," *unless* we are talking about a country that has not accepted IAEA full-scope safeguards. In other words, the NSG Guidelines only place three countries off-limits with respect to new nuclear supply commitments – India, Pakistan, and Israel. There are numerous other countries, of course, that have not concluded a comprehensive safeguards agreement with the IAEA, but they are not likely customers for a nuclear facility and, in any event, they are almost all NPT Parties who would conclude a comprehensive safeguards agreement if they had any desire for nuclear cooperation.

Second, what about transfers of dual-use items? Again, the situation is almost the same. Our concern with respect to the supply of nuclear-related dual-use items is that there should not be an unreasonable risk that the items could be diverted to nuclear explosive development or to unsafeguarded nuclear use. If the recipient in question is a full-scope safeguards State in good standing with the IAEA, then there is almost by definition a presumption that there is no such activity to which the item could be diverted, hence the export is normally approved. If the proposed recipient State is not a full-scope safeguards State, the dual-use export can still be approved, but the supplier has to make its own judgment call as to whether there is an unreasonable risk of diversion to an improper use. For our own part, we might license the supply of a controlled dual-use item to a university in India, Pakistan or Israel, but might deny it to a government-owned nuclear research facility.

You might note that a minute ago I said that there is "almost" by definition no risk of diversion in a full-scope safeguards State in good standing with the IAEA. I also said earlier that the final decision on an export is always up to the supplying State. When U.S. authorities look at a particular proposed export, they do not simply go down a prescribed checklist. We also ask ourselves whether we think there is a risk of diversion, *regardless* of whether a State is an NPT Party. In fact, the NSG Guidelines now contain a specific provision that encourages that kind of analysis. Paragraph 11 of the NSG Guidelines is called the "Non-Proliferation Principle." It provides that "suppliers should authorize transfer of items or related technology identified in the trigger list only when they are satisfied that the transfers would not contribute to the proliferation of nuclear weapons or other nuclear explosive devices."

Similarly, the Dual-Use Guidelines state that "suppliers should not authorize transfers of equipment, material, or related technology … when there is an unacceptable risk of diversion [to a nuclear explosive activity or an unsafeguarded nuclear fuel cycle activity] or when the transfers are contrary to the objective of averting the proliferation of nuclear weapons." For that reason, our judgments on nuclear and dual-use exports are always subjective, not objective. After we have "checked the boxes," so to speak, we then ask ourselves whether there are nevertheless concerns about the non-proliferation *bona fides* of the proposed recipient. And if there are such concerns, and if those concerns cannot be relieved through the receipt of government-to-government assurances, the export is denied.

In sum, there are very few countries that are negatively affected by multilateral controls – those who do not accept IAEA full-scope safeguards and those whose non-proliferation *bona fides* are questioned by one or more nuclear suppliers.

But regardless of whether multilateral export controls hinder technology transfer or not, do they make a positive contribution to global peace and security? Here the answer is clearly "yes." Presumably all of the States Party to the NPT share a common view – that the proliferation of nuclear weapons to additional States is detrimental to their national security. For that reason, they should welcome measures to ensure that a dedicated proliferator will not obtain access to equipment, material, or technology that would advance the acquisition of nuclear weapons. And potential proliferators are indeed dedicated. We have seen over the years that potential proliferators cast a wide net. When a proliferator fails to acquire equipment from one supplier, it will quickly approach another, frequently using such fraudulent techniques as front companies" and false end-user certificates.

The NSG and its Dual-Use Regime provide a potent mechanism for foiling such attempts to acquire nuclear technology for nuclear explosive purposes. First, the NSG has a Joint Information Sharing session in which Member States provide substantial information on the procurement activities of potential proliferators. Second, the Dual-Use Regime has a mechanism for reporting denials of dual-use items. In other words, if my government were to refuse to license the export of a controlled dual-use item to a particular country or location, we would report it to the Point of Contact (i.e. the Japanese Mission in Vienna), providing information on the item and the reason for our denial. This information is promptly circulated to all Members, alerting them on a real-time basis that there may be a problem with a particular end-user and giving them a "heads-up" to watch for attempts to procure the same item in their own country. I should emphasize that decisions to deny an export are not a decision of the group. They are in every instance a decision made solely by the licensing government.

What is the result of this multilateral export control effort? Clearly, it makes the acquisition of nuclear equipment, material and technology by a potential proliferator considerably more difficult. As such, it serves the interests of all States who believe that the acquisition of nuclear weapons by additional States undermines global and regional stability.

## Positive contributions to technology transfer

As I've indicated, I do not believe that multilateral nuclear export controls disadvantage either the developed or the developing countries with respect to obtaining the benefits of peaceful uses of nuclear energy. But Article IV of the NPT does not just require suppliers not to place roadblocks in the path of cooperation. It requires facilitation of the fullest possible exchange of equipment, materials, and information for the peaceful uses of nuclear energy. I can't speak for the other nuclear suppliers, but I do want to point to some of the things my government has done to implement its Article IV obligations.

First, you recall that I said the first part of the nuclear non-proliferation regime consisted of bilateral supply agreements. The United States continues to extend the network of agreements for peaceful nuclear cooperation that provide the framework of non-proliferation assurances necessary to permit the flow of nuclear information and materials. In just the last 2 years or so, we have completed agreements with South Africa, Romania, Ukraine, Switzerland, Argentina and Brazil. We are negotiating a nuclear cooperation agreement with Turkey, and we are looking at broadening nuclear cooperation with Vietnam.

Second, the United States is the largest contributor to the IAEA technical cooperation program, providing a significant portion of the Technical Assistance and Cooperation Fund. We also find cost-free experts, training courses, fellowships in the United States, and so-called "Footnote A" projects recommended by the IAEA. Those contacts, those fellowships, and those assistance projects are a major contribution to the nuclear programs of developing countries.

Third, following the U.S./China Summit in the fall of 1997, President Clinton forwarded to the U.S. Congress a series of reports and certifications that had the effect of implementing the 1985 U.S./China Agreement for Peaceful Nuclear Cooperation. Those certifications, made after a 2-year series of discussions with Chinese officials, opened the door for the U.S. to provide reactors, fuel, equipment and technology to the Chinese peaceful nuclear power program.

Fourth, bilaterally, we have established Joint Standing Committees with Taiwan and South Korea. These Committees meet each year to review the full range of cooperative projects and programs between the Department of Energy, the U.S. national laboratories and the Nuclear Regulatory Commission on the one hand, and their counterparts in Taiwan and South Korea. Our joint efforts in those committees have done much to strengthen the nuclear power programs in Taiwan and the Republic of Korea.

Fifth, Department of Energy Secretary Richardson has called for an international conference on geologic repositories to be held in the U.S. in the Fall of 1999. One objective of this conference will be to stimulate international cooperation in waste management and thereby perhaps eliminate one of the major obstacles to the further use of nuclear energy in both developed and developing countries.

Sixth, after suffering much domestic political criticism and several lawsuits, the Department of Energy has resumed taking back U.S.-origin research reactor spent fuel from

overseas. We took this step, not just for non-proliferation reasons (i.e. to recover U.S.-origin high-enriched uranium) but to help the research programs of our nuclear trading partners by solving some of their most difficult waste management problems.

In other words, U.S. policy has long been, and continues to be, to assist other countries in availing themselves of the benefits of the peaceful uses of nuclear energy. This, of course, is the policy of many other Members of the NSG as well.

## Conclusion

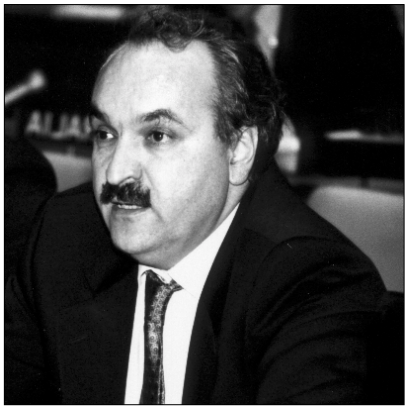
What is the "bottom line" about the NSG? Let's go back to basics again. If you are a potential nuclear supplier, you want to be absolutely sure that you do nothing to encourage or assist nuclear proliferation. At the same time, you believe that the peaceful uses of nuclear energy – for the generation of electricity and for medical, agricultura1 and industrial uses – should be available throughout the world. It you are a potential recipient of nuclear technology, you want to avail yourself of the benefits of nuclear energy. But presumably you too do not want additional States in your region of the world acquiring nuclear weapons. If this is your view, then the NSG serves your interests. Assuming you accept full-scope safeguards and are prepared to commit to nuclear non-proliferation, then the NSG does nothing to inhibit the free flow of nuclear technology to your country. What the NSG does do is help to ensure that you do not face a future which some predicted back in the 1950s, that is, a world with 10, 15, 20 or more nuclear weapon States.

### *Biographical information*

*Mr. Richard J. K. Stratford has been involved in nuclear non-proliferation and peaceful nuclear energy affairs for over 20 years. He served in the Federal Energy Administration (a predecessor to the Department of Energy) and the U.S. Nuclear Regulatory Commission in the 1970s. In 1981, he joined the Department of State where he is presently the Director of the Office of Nuclear Energy Affairs. Mr. Stratford is the U.S. Head of Delegation to the Nuclear Suppliers Group (having attended eight of its nine plenary meetings) and to the Zangger Committee. He represents the United States in the IAEA General Conference's Committee of the Whole, and he chaired the Committee of the Whole in 1997. Mr. Stratford was also the U.S. head of delegation to the expert group negotiations and to the diplomatic conferences for the Nuclear Safety Convention and for the Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management.*


POLAND

*Pedro Villagra-Delgado*



# Argentine Nuclear Export Policy: A Case Study

## Introduction

I will try to refer in my presentation to the following points from an Argentine perspective:

First, the effect of export controls on the development of a peaceful nuclear program;

Second, the role of export controls in nuclear self-reliance;

Third, export controls as a guarantee against nuclear weapons proliferation.

Let me say first that Argentina fully shares the objectives of the international community regarding nuclear non-proliferation and the promotion of the peaceful use of nuclear energy. In our experience, both goals have proved to be compatible. Our commitment to non-proliferation has been fulfilled through the implementation of an effective system of export controls that has not hindered our capacity to continue cooperation in the peaceful use of nuclear energy. On the contrary.

## Export controls before the adoption of NSG Guidelines

From its very early stages, the Argentine nuclear program has promoted the development of indigenous capacities. Whenever possible, local technologies adapted to the possibilities of the local industry were preferred to the goods, services and turnkey facilities available in the international market. Those technologies were free of superfluous sophistication and, for that reason, more suitable for many developing countries that may not have had the logistical infrastructure needed for the operation and maintenance of highly sophisticated equipment. In particular, that was the case for the construction of research reactors, the technologies involved in the nuclear fuel cycle and radioisotopes and in ionizing radiation.

In the case of nuclear power plants and heavy water production plant, where the design and construction had to be contracted from third countries, the Argentine nuclear sector was actively involved during all stages of development. That participation provided extensive knowledge and experience to a large group of Argentine professionals and technicians, which proved to be very valuable in many other areas of our nuclear activities.

The "know how" acquired gave Argentina the capacity to offer access to nuclear technology from a reliable provider to other countries, mainly in the developing world.

As soon as Argentina realized its potential as a nuclear exporter – and that was long before joining the Nuclear Suppliers Group (NSG) or even adopting the Guidelines in its domestic legislation – government policies were established with the purpose of fixing clear and non-discriminatory rules for the export of nuclear technologies and nuclear related goods. Basically, the requirements to give the green light to nuclear exports included:

- The application of International Atomic Energy Agency (IAEA) safeguards over the facility or the equipment to be transferred (for countries that had not signed a full-scope safeguards agreement with the Agency);
- The agreement of the recipient country to use the exported goods exclusively for peaceful uses;
- Prior consent of the Argentine Government for the transfer of the exported material to third countries.

With that framework Argentina was able to export, among other examples:

- A critical facility for personnel training and a nuclear research center to Peru, including a 10 MW research reactor and its auxiliary laboratories, a radioisotopes production plant and a laboratory for radiological protection, inaugurated in 1988;
- A 1 MW research and irradiation reactor (inaugurated in 1989) and a fuel element pilot plant to Argelia;
- A radioisotopes production plant to Cuba (contract signed in 1988, opened in 1995);
- The redesign of the Teheran Research Reactor to reduce the enrichment of the fuel elements from 90% to 19.90% and provision of fuel elements and other equipment (contract signed in 1987, works and supplies completed in 1993, all under the auspices of and supervision from the IAEA);
- Equipment for the fabrication of CANDU (Canada deuterium-uranium) type fuel elements to Romania (1986).

## Changes in Argentine nuclear policy since early 1980s

Argentine nuclear policy was strongly influenced since the beginning of the 1980s by the establishing of closer cooperation with Brazil, starting with the signing of a bilateral agreement on the peaceful use of nuclear energy in April 1980.

This was followed by several Joint Declarations on Nuclear Policy signed by respective Heads of State, starting with the Foz de Iguazu Declaration in 1985 and followed by the Brasilia Declaration in 1986, Viedma in 1987, Ipero in 1988 and Buenos Aires in 1990. The Presidents of Argentina and Brazil also signed in 1986 two important protocols, one for the prompt notification and mutual assistance in case of nuclear accidents or radiological emergencies, and another for mutual cooperation in nuclear sciences and technologies. Profound changes which brought democratic rule back to Argentina and Brazil in those times accelerated cooperation in these matters.

The new international environment emerging at the end of the Cold War, in which the non-proliferation of weapons of mass destruction is of outmost importance, found Argentina and Brazil already working towards the establishment of a bilateral system of accounting and control of nuclear material, which would materialize in the signing of the Foz de Iguazú Declaration in 1990. This was accompanied by advances in the economic and political integration process which created the right atmosphere that contributed to the process of convergence in the nuclear field adopted by both countries. Its positive results went well beyond the bilateral and into regional and multilateral levels. The assurances given by Argentina and Brazil to each other and to the whole international community on the exclusively peaceful purposes of their respective nuclear programs were, in fact, the implementation of the decisions included in the Argentine-Brazilian Common Nuclear Policy Declaration, signed in Foz de Iguazú in November 1990, already mentioned. Those decisions were:

a) The "Agreement on the Exclusively Peaceful Use of Nuclear Energy" (known as the "Guadalajara Agreement") signed in July 1991. The Agreement created the Common System for Accounting and Control of Nuclear Materials (SCCC) and established the Brazilian-Argentine Agency for Accounting and Control of Nuclear Material (ABACC).
b) A full-scope safeguards agreement between Argentina, Brazil, ABACC and the IAEA (the Quadripartite Agreement) signed in December 1994.
c) The entry into force for Argentina and Brazil of the Treaty on the Prohibition of Nuclear Weapons in Latin America and the Caribbean (the Tlatelolco Treaty) in 1994, after the adoption of a set of reforms to update and to make the Treaty fully effective for the whole region.

In 1995 Argentina adhered to the Treaty on the Non-Proliferation of Nuclear Weapons (NPT) and signed the Comprehensive Test Ban Treaty (CTBT), in force for Argentina since last year. These policies made Argentine adherence to NSG Guidelines only natural. The adoption in our internal legislation of the NSG Guidelines for nuclear export control came about in 1992 and was followed by the acceptance of our membership by the NSG in 1994. These steps were coherent with our non-proliferation policy.

## How does the Argentine export control legislation work?

Decree No. 603/92, dated 9 April 1992, established the Regime for the Control of Sensitive and War Material Exports, comprising strict controls upon the international sale of

certain materials, equipment, technology, technical assistance and services in the nuclear, chemical, biological and missile fields, in order to avoid the proliferation of weapons of mass destruction or their launchers. The regime also includes a chapter for the export control of conventional weapons.

Regarding nuclear goods and related services, Decree 603/92 includes an Annex with the list of nuclear materials, equipment and products that could potentially be used for non-peaceful purposes as well as the criteria for the transfer of the involved technologies, incorporating the international standards fixed by the NSG.

A potential Argentine nuclear exporter needs to obtain a license from the National Commission for the Control of Sensitive and War Materials Exports. The applications are reviewed on a case-by-case basis and the decision is made considering Argentina's commitment to the international non-proliferation regime, the international situation of the receiving country (considered both individually and regionally) and the specific conditions that may appear on each possible case. The Commission is formed by representatives from the Ministries of Defense, Foreign Affairs and Economy and, in the case of nuclear exports, by a representative from the Nuclear Regulatory Authority.

The procedure exporters must follow is simple and the study of applications is coordinated by the Executive Secretariat of the Commission. The first stage is to request the opinion of the competent technical agency, which in this case is the Nuclear Regulatory Authority (ARN). Once the technical advice is received, the Commission shall make a decision within 3 working days. If the application is approved, the Commission will issue the export license. If consensus is not reached among the members of the Commission, the matter should be resolved by the Deputy Ministers of Defense, Foreign Affairs and the Economy. The Commission also holds periodical meetings with the National Customs Administration (ANA) to coordinate tariff lists and update the formalities in order to speed up exports.

Decree 603/93 does not allow the export of material, equipment, technology, technical assistance and/or services related to the conversion and enrichment of uranium, fuel reprocessing, heavy water production and plutonium manufacturing. It determines certain requirements for the export of reactors, enriched uranium and related technology, nuclear technical assistance and certain non-nuclear products that may be used in nuclear development for non-peaceful purposes. Those requirements are:

A framework agreement for the cooperation in the peaceful uses of nuclear energy between Argentina and the recipient country;

The application of IAEA full-scope safeguards in the recipient country;

The agreement not to use the exported material for purposes related to nuclear explosive devices;

The adoption of adequate physical protection measures covering the exported material;

To request the Argentine Government for prior consent for re-export to a third country of the exported material or derived thereof.

## Export controls and nuclear self-reliance and as guarantee against nuclear proliferation

The regulations adopted and, in general, the incorporation of Argentina into the NSG did not restrict nuclear trade. It merely introduced international non-proliferation criteria to our national legislation. In accordance with the control criteria applied both before and after the formal adoption of export control legislation, the countries to which restrictions are supposed to apply would have been denied the exports anyway. Their proliferation policies or suspicious attitudes towards non-peaceful uses of nuclear energy mean that they are automatically excluded as a possible destination for any nuclear exporter country that is seriously committed to non-proliferation.

We can say, moreover, that NSG membership not only did not hinder Argentina's capacity to export nuclear technology to suitable partners, but enabled us to engage in several new nuclear cooperation processes with the most advanced countries in this field. As Mr. Stratford said, the NSG goal is not to restrict nuclear equipment and technology transfers *per se*.

For example, and as far as exports are concerned, it is important to mention that an Argentine company, INVAP SE, built a 22 MW multi-purpose research reactor in Egypt that began operation in February 1998. To obtain that project, INVAP won an international bidding process in which several companies from the most advanced countries in the nuclear field participated. In 1996 INVAP was runner-up in an international bid to build a nuclear center in Thailand. Recently, the same company has been pre-qualified to bid for a design and construction contract to replace a research reactor in Australia.

Regarding nuclear cooperation, in February 1996 the Governments of Argentina and the United States signed an agreement for cooperation in the peaceful use of nuclear energy, creating the legal and political framework for cooperative works in areas such as research and development of nuclear science and technologies, radiological protection, nuclear safety, safeguards and the role of nuclear energy. The agreement has been applied for almost 2 years now, opening the way to a number of specific projects and arrangements between the competent nuclear agencies of each country. In the last 5 years, Argentina had also signed bilateral agreements for cooperation in the peaceful use of nuclear energy with Canada, France, the Republic of Korea, Greece, Morocco, Thailand and Armenia.

A nuclear cooperation agreement between Argentina and the European Atomic Energy Commission (EURATOM) has been in force since October 1997. Argentina is among a few non-European countries that has signed this kind of agreement with the European Community. Thanks to it, Argentine experts and institutions are eligible for participation in EURATOM framework programs for research and development in the nuclear field.

Non-proliferation credentials, including NSG membership, have improved Argentina's nuclear self-reliance, facilitating, as just outlined, cooperative links with more advanced countries in this field. The NSG Guidelines were established for the control of nuclear exports in a comprehensive manner in order to ensure that nuclear energy is used

only for peaceful purposes. They are not intended to deter cooperation in this field. They have become more transparent, putting aside past misconceptions about the "cartel nature" of the NSG. Argentina is a good example that nuclear trade and cooperation are not only possible but preferable when a country adheres to the control standards promoted by the NSG. It is also a good example to deny the "cartel" concept by which some label the NSG: our nuclear exports go mostly to non-NSG members.

## Conclusion

The objective of the NSG Guidelines is the avoidance of nuclear proliferation. We are convinced this objective is shared not only by NSG members but also by the great majority of the international community. It is not only compatible but also complementary with the NPT and contributes to achieving its goals.

Its correct application does not need to hamper legitimate exports for the promotion of nuclear cooperation for peaceful purposes. In the Argentine experience it has not affected our nuclear export capabilities.

The NSG has a job to do in convincing non-members that its Guidelines are not, and should not be perceived as, constraints to the legitimate access to nuclear technologies or to the promotion of peaceful uses of nuclear energy by exercising a responsible nuclear export policy. We are against the proliferation of nuclear weapons, not against the proliferation of nuclear energy for peaceful purposes.

Towards the achievement of this goal, it is essential that the Guidelines should not be applied to obtain commercial advantages.

It is also clear that if an effective regime to control nuclear exports is ever to be in place, joint international action is essential to include all major suppliers. The NSG Guidelines should be applied even-handedly to all international suppliers.

Proliferation concerns make it necessary to update the Guidelines occasionally to adjust them to the evolving realities. Transparency and comprehensiveness are key elements for a broad acceptance of nuclear export control Guidelines as a guarantee against nuclear proliferation.

These seminars contribute a great deal to transparency both on NSG activities and on non-proliferation in general. In that regard I hope non-NSG members attending this seminar found Mr. Stratford's exposé on how the NSG works from a practical point of view as useful and clear as I did.

To finish, let me recall the views, expressed by the representative of Brazil in the 1st Seminar in 1997, when she stated "…the NSG is an important regime to regulate and, at the same time, facilitate trade of nuclear goods and service." Argentina fully shares that opinion.

### Biographical information

*Mr. Pedro Villagra-Delgado studied at the National University of Tucumán, where he graduated as a Lawyer in 1974 (with honors). In 1994 he earned a Master in International Law (LLM) at King's College, University of London.*

*He joined the Argentine Foreign Service in 1978 after graduating with honours at the Foreign Service Institute. Since then he served at the Ministry's Legal Office (1978-1980), Argentine Permanent Mission to the U.N. (New York, 1980-1988), Foreign Ministers Cabinet (1988-1989), South America Division (1989-1990), Disarmament and Nuclear Affairs Division (1990-1992). From 1992 to 1996 he was the Argentine Consul-General in London. Since 1996 Mr. Villagra-Delgado has been Director of International Security, Nuclear and Space Affairs.*

*He has been a member of many Argentine delegations to international organizations and in several bilateral and multilateral negotiations. He has been a member of the Board of Directors of the National Commission for Space Activities (CONAE) since 1996.*

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# A Prescription for Evolution: The NSG's Impact on Non-Proliferation and the Right to Access

## Introduction

I wish to express my appreciation for the remarkably efficient manner in which this Seminar has been prepared and organized. I hope that this will be a successful step towards a transparent and participatory process, as envisaged by the "Principles and Objectives" adopted in 1995. This process should apply both to Zangger exporters and Nuclear Suppliers Group (NSG) exporters. Without it, it would be difficult to imagine that even the Zangger Committee would any longer be recognized by the Treaty on the Non-Proliferation of Nuclear Weapons (NPT) members. As for the NSG, it appears that strong resentment and criticism would continue if the problems raised persistently by the NPT State Parties are not thoroughly addressed.

For the moment, I am expected to comment on the Keynote Speech and express my views and observations in that context. In doing so, I too shall follow Occam's axiom that the simplest explanation for things is usually the best and most valid. The "back-to-basics" approach adopted by the speaker is particularly appealing as it helps put matters into a proper perspective before making any judgements. In examination of the basics, however, I shall attempt to go one step further and present both the diagnosis and the prognosis of the issues and problems the way I see them.

I shall of course also try to be brief. Brevity, after all, is the soul of wit, as Shakespeare put it.

## Diagnosis: The NSG inception and purpose

The development of THE BOMB in the mid-Forties awakened the world to the power and the horror this little thing called the ATOM had embedded within its tiny and

apparently simple structure. Two questions arose immediately. How to curtail access to the nuclear bomb and how to ensure commercial benefits?

The awesome power of nuclear arms could yield military supremacy to anyone who owned it. Thus, security implications would dauntingly multiply and become unmanageable if the number of possessors grew out of hand. So there was an urgent move to deny and prevent the availability of material and technology for weapons-producing purposes. At the same time, the new source of energy was also the source of exceptionally lucrative business opportunities especially in the aftermath of sharp oil price hikes.

Bilateral arrangements were entered into in order to maintain a level of control over the flow of nuclear material. With the entry of other industrialized countries into the nuclear field and the rapidly expanding market for nuclear energy, however, this soon proved insufficient. Hence the need and initiative for an international treaty.

Two main obstacles needed to be overcome. Most developing, as well as developed, States were not prepared to submit to a permanent division between possessors and non-possessors. Nor would they accept impediments that tended to limit capabilities in utilizing nuclear energy.

The NPT therefore emerged from a different conceptual standpoint. On the question of security, it put a strong emphasis on nuclear disarmament and recognized the distinction between nuclear weapon States (NWSs) and non-nuclear weapon States (NNWSs) on a provisional basis pending elimination of these weapons as the ultimate goal. On the commercial side, it shifted the ground from export control to ensuring access. Both the *travaux préparatoire*s and the text of the Treaty testify vividly to this fact.

I will not dwell upon disarmament here as it is not the subject of discussion at this Seminar. I merely stress that efforts aimed at non-proliferation will not fully and forever be successful as long as nuclear arms are not eradicated. Many of us present here also, I am sure, share the view that a comprehensive nuclear disarmament treaty could and should be negotiated in good faith.

On the issue of access, the NPT is explicit and absolutely clear. Access to nuclear material and technology is defined as an *inalienable* right of all States Parties to the NPT. Nothing in the “Treaty” could be interpreted in a manner that would jeopardize this right. As such, no NPT Member is allowed to deny the right to access by any other fellow Member.

Members of the London Club were of course happy, like the rest of the international community, that a treaty had been achieved. But the NPT’s stress on access in place of commercial control did not satisfy their requirements. It was evident, during negotiations, that any mention of export controls would be rejected by the great majority of interlocutors. So the matter was set aside temporarily only to resurface in the post-treaty period.

The club reconvened as the Nuclear Suppliers Group. It was evident that advanced States would not stop development of their capabilities in the peaceful activities. So they

had to be brought on board, and they were. The NSG thus became a forum to regulate exports among all potential suppliers and bring commercial interests under control.

Access, in the meantime, was ensured among the NSG members. Those outside it, however, were left with no real means of pursuing their rights. They found themselves additionally disadvantaged as States with advanced nuclear capabilities, who were distinctively vocal in demanding ensured access, joined ranks with the major suppliers. Developing States thence found themselves in a total vacuum.

## Negative inferences about the NSG

What I have said so far describes, from an angle a bit different from that of the speaker, what the NSG is and does. The speaker has also described what the NSG is not and does not do. Let us review those assertions:

- ***Is the NSG a cartel?***

It started originally as a cartel. But political and security exigencies as well as the commercial interests of individual members were not commensurate to maintaining it. So the assertion that NSG does not act as a cartel today can be considered valid. This assertion does not lead, nonetheless, to any value judgement. For most States, whether or not the NSG is a cartel is not the essential point of concern.

- ***Is NSG a secret organization?***

No, to the extent that we all know that it exists. Yes, in the sense that its deliberations, decisions and activities remain sealed off to outsiders.

- ***Is the NSG a closed club?***

Of course not to the actual or potential suppliers who have succeeded in becoming members. But it remains closed to non-members. And new membership, as we have learned, requires a unanimous decision. This means that a single objection by a member can deny entry to an interested State. It is therefore appropriate to say that it is not a closed club. But it is definitely an exclusive club.

- ***Does the NSG attempt to impose embargoes?***

The view from inside is that it does not. The view from outside is that it does not merely attempt to impose … it does impose. It might be true that the NSG does not make formal decisions to boycott countries. But it is logical to assume that any member whose policy calls for an embargo would use the forum to encourage others to do the same.

- ***Has the NSG negatively affected trade?***

As far as internal trade among advanced States in the nuclear field is concerned, there should be no adverse effects. The only limitations they might face are dictated by individual commercial interests. For others, it is difficult to make an assessment since data on specific denials and restrictions by the NSG is not made public. Background papers for the 1995 NPT Conference should have contained this information. But they did not.

Any assessment on this issue, however, would only be valid if it is made against the undertakings under the NPT and the Principles and Objectives document adopted at the 1995 NPT Review and Extension Conference. *Inter alia,* undertakings that:

ensure the exercise of the inalienable right to access for all States Parties;

all parties to the NPT should enjoy this right without exception;

the right includes the fullest exchange of material and technological information;

preferential treatment should be accorded to NNWSs especially the developing States.

## NSG conditions of eligibility

Guidelines agreed by the NSG membership give some indication of conditions applied to the recipients of peaceful material. These include Guideline 11 and the Dual-Use Guideline which stipulate the following:

"Supplies should authorize transfer of items or related technology identified in the Trigger List only when they are satisfied that the transfers would not contribute to the proliferation of nuclear weapons.…"

"Suppliers *should not* authorize transfers of equipment, material or related technology when there is an *unacceptable* risk of diversion to a nuclear explosive activity.…"

It is clearly evident, from these guidelines, that suppliers decide on whether or not they allow a transfer to take place based on their own conclusion. The fact is underscored by the Speaker where he confirms that the "supplier has to make *its own judgement call* as to whether there is an *unreasonable* risk of diversion to an improper use."

The Speaker has also identified to whom exports will be denied. Namely, those who do not accept International Atomic Energy Agency (IAEA) full-scope safeguards (FSS) and/or, "those whose non-proliferation *bona fides* are *questioned* by *one* or more *nuclear supplier(s).*" In explaining this he states that first the suppliers "check the boxes." This, I presume, means that the State has fulfilled its NPT obligations or that at least has accepted the FSS. Next comes the second condition.

"…*we* then ask ourselves whether there are *nevertheless* concerns about the non-proliferation *bona fides* of the proposed recipient and if there are such concerns, and such an concerns can not be relieved through government to government assurances, the *export is denied*." The Speaker further stresses that the decision to deny export is *subjective* and *not objective*.

## Appraisal of NSG conditions

What has been said on NSG conditions is not an attempt at catching the catchwords. It is simply an effort to underline how it operates and through what prism it sees and

evaluates States who seek access to material for peaceful purposes. This renders the appraisal of the conditions applied to the recipients both possible and accurate. Such appraisal, of course, should be made against NPT obligations.

The fundamental point of departure for NSG members is that each State has the sovereign right to decide whether or not it exports something to another State. In the case of nuclear material, States are also bound by the NPT not to export material for weapons purposes.

### *Legal evaluation*

From a legal standpoint, and judging them on their sole and individual merit, these inferences are correct. But, put in context, both assertions have to be qualified.

The sovereign national right to decide on exports should be weighed against the international obligation to ensure the inalienable right of access by the concerned NPT members. Similarly, the Treaty undertaking not to export weapons-related material should be considered against the Treaty undertaking to provide for the fullest exchange. Furthermore, this should be examined against the provision that nothing in the NPT should be interpreted in a manner that would adversely affect the right to access.

*Pacta sunt servanda* dictates that all commitments entered into freely by States should be upheld. Furthermore, commitments under international law supersede those of national law. By acceding to the NPT, supplier States have accepted undertakings that, on the one hand, limit their sovereign right by defining what they cannot export and, on the other, by stipulating what they cannot avoid exporting.

Any State or group of States who, individually or collectively, decide to offer or deny access to nuclear material may be liable for violation of Article I or Article IV of the NPT. The judgement or decision may be made by the individual State. But that decision can entail liability.

In conjunction with this, it should be recalled that conditions to qualify for access are not arbitrary and left to individual decisions by State Parties. They are set by the "Treaty." Those conditions, for the moment, are acceding to the NPT and accepting the full-scope safeguards. Unless and until these conditions are modified by amending the NPT or additional protocols, they remain the sole conditions of eligibility.

The only exception one might draw is when a member withdraws from the NPT or is *proven*, beyond a reasonable doubt, to be in flagrant violation of the NPT. In this very exceptional case, one could argue, that the State concerned has deprived itself of its own inalienable right until it stops its violations and decides again to comply. But evidence and proof that is clear and convincing is the minimum prerequisite.

Even then, and in the absence of any other "Treaty" body that assumes this role, the IAEA should examine the evidence and establish that violation has in fact occurred. This was reiterated in detail in the provisions of the Principals and Objectives document.

In a word, all NPT obligations are objective and cannot be qualified, modified or curtailed by subjective interpretations.

### *Practical evaluation*

It has been argued, correctly to a certain extent, that the safeguards do not provide a sufficient guarantee against diversion of material to weapons purposes. The cases of North Korea and Iraq are routinely cited as evidence. The IAEA has since gone on the defensive by stating repeatedly that it cannot give a clean bill of health on any country even after close scrutiny.

The fact is that IAEA is not at fault. Nor are the safeguards. Surely they can be improved, and they have been. But they are not the sole reasons for failure. Violations have occurred on two sides, the recipients and the suppliers. As for the recipients, the matters are being redressed. So far as the suppliers are concerned, nothing is being done.

The same is true for non-NPT members who have achieved nuclear weapons capability. The NSG is claimed to comprise, within its expanded membership, actual and potential nuclear suppliers. Therefore, the so-called “threshold States”– the term is hardly appropriate – could have received their required material only through NSG membership. Aside from a few exceptions, we all know that this indeed is the fact. Again nothing is done at the suppliers end.

The NSG has no mechanism to ensure that its members remain faithful to its own Guidelines. In most cases, including those mentioned above, they consider violations only in relation to companies and individuals. Each NSG member carries its own responsibility to deal with these violations. This raises serious questions about the practical functioning, viability and reliability of the NSG, as it abrogates to each of its members the decision to provide or deny access and, at the same time, fails to address their violations.

## Basic problem

The points raised here explain some of the reasons for criticism towards the NSG. We should not forget that the NPT membership continues to refuse to recognize the NSG and has objected, so far, to any reference that would signify acknowledgement of NSG activities in any of its documents.

I believe the essential problem with the NSG is that it is viewed increasingly as a self-appointed body for NPT compliance. It makes decisions on providing or denying access to nuclear material, equipment and technology and carries out those decisions. Matters that it deals with relate to the core and essence of the NPT.

In assuming this role, the NSG maintains evident and clear deficiencies in three areas: scope, composition and conduct.

The prevailing terms of reference for the NSG, as far as the NPT is concerned, is Article I and to some extent Articles II and III. There is no reference to Article IV. This

limited scope undermines the possibility of an even-handed and fair approach. The NSG operates on the presumption that commercial activity can be controlled without considering the rights of the recipients.

The NSG is further handicapped by the exclusivity of its membership. Decisions of the NSG affect all members of the NPT. But its composition is limited to suppliers plus what is referred to as potential suppliers. NPT members interested in joining would presumably have to prove that they fit into one of these two categories. Even then they would be subject to a political decision as any member of the NSG can block the entry.

There are also no procedures envisaged for application of membership. A State like Switzerland for instance was accepted, as we have learned, only after it complained that it was a prominent member of the Zangger Committee and should not be deprived of NSG membership. But it is clear that not every one can get an entry ticket through voicing complaint. In general, NSG membership is initiated through its existing members and not the concerned and interested States.

Unlike the Zangger Committee, there is no distinction in the NSG Guidelines between the States who have joined or refused to join the NPT. Even the FSS requirement is applied loosely. There have been several instances where a State that is not party to the NPT and has not accepted safeguards has been provided better access than an NPT State Party with safeguarded facilities. The conduct of the NSG, in this context, is deeply questionable.

There are also major issues about transparency and procedures that remain pending. Information on the details of activity is largely confined to the members. Within the membership, the commercial interests of the companies and the private sector are the only rule that governs confidentiality. Outside the membership, nearly everything becomes restricted. Furthermore, there is no process of consultation and consent involving the States to whom export is restricted or denied.

## Prognosis

As is usually the case in medical problems, diagnosis is more elaborate and detailed than prognosis. We have already identified the problems, but they should not remain permanently as problems. In fact, with goodwill and an open mind, they can be addressed and they can be resolved.

The underlying purpose of the NSG, to help prevent proliferation, is in line with the common objective of the international community. It just has to be put in the right context and perspective. Here are some steps I suggest for a remedy:

Organize a systematic follow-up for these seminars. The 1995 NPT Review and Extension Conference calls for transparency “in the framework of dialogue and cooperation.” New York, Geneva or Vienna could be the venue to deepen exchanges and dialogue on issues identified at these seminars. Cooperation would have to ensue.

Make the Transparency Working Group (TWG) open to the participants who are invited here. Instead of the TWG calling for a seminar to bring the people together it can convene with the same participants. The TWG should be first in line to make its own work transparent and participatory.

Share information, not only on the structure, organization and program of work but also on details of operation. Specific information on cases where exports are fully granted, restricted or denied are particularly important. The database at the Japanese Mission in Vienna should become accessible to any NPT State Party who so requests.

Put in motion a process of consultations with the States who seek exports. Explain to them directly why certain exports are made or refused. In the case of denials, and where the State concerned is an NPT member and has accepted FSS, describe the reasons for denial and what can be reasonably expected to alter the decision.

Define the conditions for approval of exports in an objective and concrete manner. Requirements such as "non-proliferation bona fides" are too vague and interpretative. They open the door for subjective judgements and can be misused to serve individual political or commercial interests. Criteria of such an open-ended nature should be discarded.

Utilize the IAEA to verify concerns where there is hesitation in approving the export. Provision 9 of the Principles and Objectives document from the 1995 NPT Review and Extension Conference is the reference. In that context, if the State concerned accepts the investigation and the IAEA finds no evidence of mischief, the restriction should be removed and export granted.

Develop a policy whereby joining the Additional Protocol guarantees full Article IV access to any NPT Party without exception. This helps allay the concern that the present safeguard system is not sufficient. It also serves as a major incentive for NPT States Parties to accede to the Protocol.

Bring the guidelines into full compliance with all your undertakings under the NPT. Remember that the right to access is inalienable. There cannot be restrictions for any safeguarded facility in any Member State. Exceptions should be very, very rare and supported at least by clear and convincing evidence of misconduct.

Devise a mechanism to receive and address concerns and complaints. The process should particularly be open for NPT States Parties with full-scope safeguards agreements. It should be possible to address complaints regarding actions by the NSG as a whole or any of its members and include both general and specific cases.

Allow the participation of interested NPT Members in all your meetings as observers with rights that are normally accorded under this status. Follow this by opening membership to observers who are prepared to participate actively and contribute to the work. Arrange a simple process of application and disallow the use of consensus against new membership.

Plan to establish a compliance body within the NPT to cover all the undertakings under the Treaty. The process of evolution of the NSG and establishment of this NPT body should proceed in parallel. This will allow you to envisage a point in this process where the NSG could dissolve and transfer its responsibilities to the permanent body.

Give positive consideration to the possibility of drafting and negotiating a treaty on export control. If we put the lists of the NSG and that of the Australia Group on chemical and biological exports together they cover a very broad range of products. The lists continue to grow as dual-use items expand. A universal and comprehensive international regime seems very much in order.

## Conclusion

The NSG may have done some good in preventing nuclear proliferation. The nature of the work is such that success stories will not become known. But the failures become extremely visible. Indeed it has to be so. For nuclear weapons, with their immense security implications, a single case of proliferation is the cause of major international concern.

Despite the heavy involvement of politics, the NSG is essentially defined as a technical arrangement. But non-proliferation cannot be achieved solely through technical means. Barriers, no matter how large, can still be cracked by a dedicated proliferator. One cannot ensure non-proliferation without attending the larger political and security concerns of States.

A small body like the NSG can be more manageable. Agreements can be reached more easily and it can be more flexible in responding to different situations. But it is too small and too exclusive to deal with a big issue like nuclear proliferation with its severe and devastating consequences. Even purely technical decisions there can have serious bearings on security and development of all States.

As for any other being, evolution is the key to survival. The NSG is in dire need of an overhaul. It can choose to evolve by taking up the suggestions made here and elsewhere. That will bring it more acceptability and lead it towards universality. Eventually it should be prepared to give way to a universal and fully representative body. It is only thus that non-proliferation can be sustained.

## Biographical information

*Mr. Cyrus Nasseri has been engaged in multilateral diplomacy for the last 18 years. As Director of International Organizations in Iran's Foreign Ministry and Ambassador and Permanent Representative to the United Nations in Geneva he has played a prominent role in the formation and conclusion of a number of international treaties.*

*In the field of disarmament, he has been heavily involved in the negotiations on Chemical Weapons Convention, Biological Weapons Convention, Comprehensive Test Ban Treaty, extension of the NPT and initiation of the Fissile Material Cut-Off Treaty. Through this, both as his personal position and on behalf of the Government, he has maintained a strong support for efforts towards disarmament notably in the area of weapons of mass destruction. He has, at the same time, insisted consistently on the need to ensure the right of developing states to acquire material and technology for peaceful purposes and has been a main interlocutor in negotiations on this issue. In fact, the initiatives of groups such as the NSG towards further transparency are at least in part a response to concerns raised by him and others who have called for more open and participatory arrangements in the fulfillment of disarmament treaty obligations.*

*Ambassador Nasseri is currently an advisor to the Foreign Minister and a consultant to international organizations.*


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# Further Cooperation in the Field of Export Controls

## Introduction

Discussions on future cooperation in the field of nuclear export control naturally reflect attention to the problem of the non-proliferation of weapons of mass destruction (WMD) and missile delivery vehicles, which is one of the top priorities in international politics. The situation in this field to a large extent determines and will determine the fortunes of peace and security on the planet; it radically influences and will influence stability and the processes of control over strategic arms and disarmament.

The year and a half that has passed since the 1st International Seminar on the Role of Export Controls in Nuclear Non-Proliferation (1 Seminar) convincingly demonstrates the importance and continuing relevance of the topic discussed. The intervening time has brought about new trends and challenges.

Without any claim to an exhaustive analysis we cannot ignore that last May's nuclear tests in India and Pakistan create a qualitatively new situation for nuclear non-proliferation.

Those nuclear tests led to the meetings of the foreign ministers of the "Five" and the "Eight" on 4 June 1998 in Geneva and 12 June 1998 in London that resulted in the issue of joint communiqués. On 6 June 1998 the United Nations (UN) Security Council adopted resolution 1172 to that effect.

Those documents lay a solid groundwork for further steps aimed at strengthening the nuclear non-proliferation regime, peace and stability in South Asia.

Active efforts are being undertaken on a bilateral basis, within the framework of the "Five" and other multilateral mechanisms, including the Task Force on Nuclear Tests in India and Pakistan, with a view to encouraging New Delhi and Islamabad to change their

attitude towards nuclear issues, adopt a policy of non-proliferation, sign the Comprehensive Test Ban Treaty (CTBT) without any conditions and join the Treaty on the Non-Proliferation of Nuclear Weapons (NPT) as non-nuclear States.

Positive changes in the positions of India and Pakistan, namely the declarations by their leaders that they are ready to sign the CTBT as early as this year, as well as to take part in the talks on the prohibition of the production of fissile materials at the CD in Geneva, give rise to a certain optimism. Of course, it is important for the intentions of the two countries in the non-proliferation field to be realized in practice in terms of enforcing rigid national export control mechanisms. Assistance to that effect on the part of the Nuclear Suppliers Group (NSG) could be a good example of further cooperation in the area of export control.

Another aspect to be taken into account when we speak about future cooperation in the export control field is a deep, delicate, multi-dimensional interconnection between export control, non-proliferation and disarmament. It is no secret that the relevant multilateral and bilateral arrangements, agreements and other instruments constitute in many respects a single international legal framework in this field. The NPT, being a fundamental instrument of non-proliferation and a major factor of international stability and security, has an important disarmament dimension. In our view, keeping the momentum attained in the field of reducing strategic offensive weapons (a process in which so far only Russia and the U.S. have participated) is an important contribution to the strengthening of the non-proliferation regime; without it, strengthening and expansion of the NPT would be inconceivable. On the other hand, the disarmament process in the field of strategic offensive weapons is based on the Russian-U.S. Anti-Ballistic Missile (ABM) Treaty. In other words, in the present interdependent world, any precipitous actions compromising the arrangements could have the most serious implications for the entire NPT regime that would reduce the prospects of cooperation in the field of export control to the purely theoretical.

Prevention of proliferation of nuclear, chemical, biological weapons and of their delivery vehicles has become one of the most important factors in maintaining international stability and therefore a priority of the national security policy of many countries, including Russia. In recent years, Russia and the U.S. have taken steps to reduce the global nuclear threat and to ensure control over advanced sensitive technologies. Under their bilateral commitments, Russia and the U.S. have deactivated over 18,000 strategic and tactical nuclear warheads, agreed to withdraw from their nuclear weapons programs about 50 metric tons of plutonium each and to process it in such a way that it could never be used for nuclear weapons purposes.

A global process of reduction of nuclear weapons and transition from the Cold War to constructive economic cooperation – with all the concomitant complexity and incomplete character of these trends – is also hindered by certain countries' aspirations related to WMD and, primarily, in the nuclear area. There is a growing danger of an unauthorized transfer of nuclear technologies and expertise, development and use of WMD by international terrorist groups, which poses a serious threat to international security at the global and regional

level. These threats should be effectively fended off, which will require coordinated actions by all States, and primarily by the suppliers and importers of nuclear products.

Proceeding from the above, two interdependent tasks may be emphasized: the first is to strengthen the non-proliferation regime and the second is to provide conditions for developing international cooperation in the peaceful uses of nuclear energy. These tasks stem from the main provisions of the NPT, the Review Conference of which is to be held in the year 2000.

## Important mechanism

In the context of these tasks we consider the Nuclear Suppliers Group to be an important mechanism of nuclear export control. We believe the work that the NSG has been doing for almost a quarter of a century has contributed to the strengthening of the non-proliferation regime, which eventually meets the interests of global and regional security.

We oppose considering the NSG as an elite club of developed States which acts to restrain access to advanced technologies by other States (a view that is quite widespread). The NSG member countries are building their relations on an equal and non-discriminatory basis and in no way hamper mutually beneficial cooperation in the area of peaceful uses of atomic energy.

In this context it is important to stress that the NSG is instrumental in controlling "sensitive" exports at the national level pursuant to the agreed and acknowledged criteria and rules without being a mechanism to prohibit export of the controlled goods. Thus, the NSG enables the participating States to take an active part in devising rules and norms of civilized conduct in the world commodity markets.

The Russian side supports the idea that the NSG should remain the non-discriminatory regime of export control and that its activities should meet the statutory tasks and not be directed against any other States. We stand for dialogue with non-partners rather than confrontation.

While considering increased transparency of the NSG's activities as an essential area of its work, we would like to note the useful role played in this regard by the 1st Seminar held in 1997 in Vienna. The significance of this forum lies in the fact that it was essentially the first informal meeting between nuclear suppliers and importers that helped to disseminate proper awareness of the NSG's objectives and tasks, and to summarize its experience and achievements in the area of export control.

Speaking about the tasks and purposes of the current 2nd NSG International Seminar on the Role of Export Controls (2nd Seminar), I would like to note that we are not inclined to regard it as a meeting of teachers and pupils, nuclear technology "haves" and "have-nots." Such an approach would lead to an invisible but distinct barrier between the NSG and non-partners, putting the former into a privileged position as compared to the latter. That is exactly what we do not want, because it would hamper the solution of the

main task, as we understand it: the establishment of international cooperation in the interests of non-proliferation, and the safe development of the nuclear energy sector.

The need for cooperation of this kind is dictated by the emergence of new challenges and problems which, to be solved, require joint efforts on the part of many States. Let us take up, for instance, the problem of intangible technology transfer, which we understand to mean the "drain" of technologies in the course of training, scientific exchange and through e-mail channels. Because of its novelty, it has only recently become the subject of discussion within the framework of international export control regimes. The discussion of this topic, held in the framework of the NSG, demonstrated the entire complexity of control over sensitive technology transfer in an intangible form at the national level, even taking into account the capacities available to developed States. In Russia, as in other NSG States, efforts are under way to enhance control over the transfer of know-how, scientific and technical information and services used in the production of WMD. However, it is quite apparent that without constructive help and cooperation on the part of nuclear-technology-importing countries it is hardly possible to put an effective barrier against unauthorized leakage of sensitive information. This is but a single example of the areas where cooperation is both feasible and needed.

## Open dialogue

In our view today, taking into account the nature of the emerging problems, there is a need for an extensive, open dialogue on problems of nuclear export, including the creation of a diversified structure of cooperation between exporters and importers of nuclear technologies and materials. Regarding the evolution of these contacts we envisage that the communication channels would become a two-way street, allowing NSG members to provide information about NSG activities and decisions and the importing countries to formulate their concerns on the issues related to nuclear export control, thus influencing, to a certain extent, the decisions taken by the regime. Wider cooperation with non-partners could be patently instrumental in identifying fresh ideas and insights which could facilitate the timely and complete solution of the acute problems which are the subject of this Seminar. It would also seem to be useful and stimulating for us to have the possibility of discovering the opinion of nuclear technology importers on the content of the Guidelines and the NSG control lists which could be taken into account should those documents be amended.

Thus, in our view, there are vast possibilities for turning the NSG into a more open organization and for deepening cooperation with the non-partners. Formalization of this process might require, in the long run, creation of a structure along the lines of a "Friends of the NSG Club" of importing countries that closely cooperate with the NSG, that support its Guidelines and that have brought their export control system in conformity with NSG requirements.

I would like to underline that Russia favours the idea that the greatest possible number of non-partner countries should act pursuant to the NSG principles and requirements. We are also aware that the countries that have made and meet such

commitments deserve the benefit of wider access to technologies for peaceful uses of nuclear energy, including dual-use technologies.

Basically, cooperation with non-partner countries might be three-dimensional: global, regional and bilateral. In light of this, it would be advisable, in our view, to continue the practice of international seminars on export control, making them a permanent forum for contacts with the non-partner States. It is also advisable to reflect on the organization of such seminars, especially for the South Asian and Middle Eastern countries. We are of the opinion that, in addition to State contacts, cooperation through private business may become an important area of activities for assistance in creating export control mechanisms at the enterprise and company level. I would like to illustrate this idea, using as an example the Russian experience in establishing an internal compliance system of export controls at enterprises and organizations. The main purpose of establishing such a system that includes a set of measures voluntarily implemented by enterprises is the formation of a mechanism to verify the legitimacy of foreign trade transactions, in particular, with a view to preventing transfers of materials, equipment, technologies, scientific and technological information that may result in the violation of Russia's international commitments in the field of non-proliferation of WMD and their delivery vehicles. While the methodology manual for establishing the above system was approved less than a year ago, it is noteworthy that, to date, the export control services have already been put in place at about 50 facilities within the Ministry of Atomic Energy, i.e. directly in the area of nuclear export control. We are ready, of course, to share our experience with foreign partners, including non-members of the NSG. A realistic way to implement such an exchange would be, apart from interagency relations, to establish direct contacts among interested enterprises.

## Contacts with non-participating countries

I would like to avail myself of this opportunity to outline the issue of our contacts with non-participating countries.

We consider cooperation with non-partners an important constituent element of the functioning of the export control regime. The Russian side is seeking actively to use its contacts with the non-NSG countries to clarify the purposes and objectives of the regime and to ascertain those countries' attitudes toward the NSG in terms of their joining the NSG or adhering to its principles.

We attach special importance in this field to cooperation with the Commonwealth of Independent States (CIS) countries, which we consider to be the priority area of the foreign policy concerns of the Russian Federation.

With due regard to the growing integration processes within the CIS, export control problems have become one of the important areas of mutual cooperation. In particular, we mean the gradual unification of national export control systems, harmonization of legislation and establishment of a wide-ranging information exchange in this sphere. In the long-term perspective we are planning to agree on common standards and regulations which would be oriented on internationally accepted standards to the largest extent possible.

I would like to elaborate on this subject.

The Agreement on Coordination of the Commonwealth Countries' Actions on the Export Control over Dual-Use Goods and Technologies was concluded in 1992 in Minsk. It was based on the arrangement to create, in each participating State, a national export control system that meets the requirements of the international regimes. For this purpose, we conduct meetings at Deputy Foreign Minister level, where the exchange of views on the creation and functioning of the national export control systems and on the international mechanism of export control takes place. Especially close cooperation in this field was established within the framework of the currently emerging Customs Union which already embraces five countries – Belorussia, Kazakhstan, Kyrgyzstan, Russia and Tajikistan. It is important to note here that special attention is paid to the export control issues as one of the key components of the interaction among the participants of this economic bloc. When establishing the Union the parties, in particular, stated that in accordance with their legislation they would apply export control over armaments, military hardware, nuclear materials and equipment as well as dual-use goods and technologies. In doing so, the members of the Union agreed that lists of goods and technologies subject to export control by the parties and its procedure would be based on international agreements governing international export control regimes irrespective of membership of the parties in such agreements. A commission on interaction in export control will be established under the Integration Committee, a governing body of the Customs Union, with its principal function being promotion of the creation, development and improvement of national export control systems in the participating States, coordination of actions and fostering of information exchanges in this field.

## Conclusion

Thus, a unique situation has emerged: within the framework of the multilateral agreement with only one participant being at present a member of the NSG, the task is to develop a common procedure for export control, obligations of the Union's members to observe and apply regulations and standards adopted in the NSG and other international export control regimes. Such a situation allows us to consider that within the Customs Union of five States an operational model of cooperation with non-partners in the field of export control is taking shape.

### *Biographical information*

*Mr. Andrey Efimov, Deputy Director of the Department for Security Affairs at the Ministry of Foreign Affairs in Moscow, heads the Russian delegation to multilateral export controls meetings. Mr. Efimov received his degree from the Department of Oriental Languages of Moscow State University. He has been posted in Japan twice: in 1990-1993 as Deputy Director of the Asia-Pacific Division of the Ministry of Foreign Affairs and in 1993-1997 as a political counsellor at the Russian Embassy in Tokyo.*

*Edward Yau*

# The Role of Transshipment Centres in International Cooperation Against Proliferation

## Introduction

May I start my presentation by drawing reference to some of the key remarks made by Mr. Efimov. Mr. Efimov mentioned in his keynote speech that the essence of the Nuclear Suppliers Group (NSG) 2nd International Seminar on the Role of Export Controls (2nd Seminar) is the forum provided for both nuclear technology suppliers and importers to disseminate proper awareness of NSG objectives and tasks, to summarize its experience and achievements in the area of export control. He further illustrated that the tasks and purposes of the 2nd Seminar are not inclined to be a "meeting of teachers and pupils, nuclear technology 'haves' and 'have nots.'" Rather, it is a forum for "establishment of international cooperation in the interests of non-proliferation, and the safe development of the nuclear energy sector."

I fully agree with the above insightful remarks. It is in this very spirit of cooperation and understanding that, Hong Kong, China took part in the 1st International Seminar on the Role of Export Controls in Nuclear Non-Proliferation (1st Seminar) in Vienna in 1997 and made our contribution highlighting the importance of a tripartite responsibility among supplier countries, importing countries and transshipment centres. With the same spirit, we come to this forum again not for tuition but for sharing of ideas and experience in strengthening cooperation against proliferation.

Unlike previous speakers, you will find limited usage of words like "national defense," "nuclear threat," "regional stability" or "disarmament." Not that we do not subscribe to those concerns, rather, I would like to tackle the question of non-proliferation from a different perspective – from the perspective of trade, and the perspective of how a trading centre like Hong Kong strives to strike a balance between control against proliferation on one hand and to facilitate legitimate trade on the other.

To lay down the background of my discussion, I would like to tackle three common doubts on the role of trading centres or transshipment centres in the international trade of nuclear technology and related substances. These doubts or questions commonly asked are:

First, "Do non-members of NSG exercise the same degree of export control as regime members?"

Second, "Are transshipment centres necessarily the points of diversion?"

Third, "Does export control necessarily jeopardize trade and economic development causing reluctance for compliance?"

In answering the above questions, I shall use the actual operation of control in Hong Kong, China to demonstrate that

(a) We are a busy transshipment centre and yet maintain stringent export control;

(b) We are *not* members of any export control regime; and yet we adhere fully to the highest international standards; and

(c) We do not see control and trade facilitation are necessarily a zero sum game.

## Hong Kong, China

Let me start by outlining the background of Hong Kong, China, particularly after our reunification with the Mainland of China in July 1997.

Hong Kong, China is a Special Administrative Region (SAR) of the People's Republic of China (PRC). Under the Basic Law, the mini-constitution drawn up under Article 31 of the PRC's Constitution, Hong Kong enjoys a high degree of autonomy under the concept of "One Country, Two Systems." Regarding trade control, the Basic Law provides that Hong Kong enjoys full autonomy in trade and is an autonomous trading entity and a separate customs territory. That has secured us a separate membership in World Trade Organization (WTO), Asia Pacific Economic Co-operation (APEC) and World Customs Organization (WCO) under the name of Hong Kong, China. It also provides that Hong Kong manages our own border and customs control over movement of persons, goods, vehicles, aircraft and ocean liners in and out of the territory.

In terms of economic and trading status, Hong Kong is the world's eighth largest trading entity with total trading volume valued over US$ 394 billion. We have the world's busiest container port handling over 13 million container boxes a year and the world's busiest airport in terms of air cargo throughput. Trade is no small part of our economic life. In fact our trade volume is 228% of our annual GDP, which signifies the essence of trade to our economy and hence the obvious need to take trade control seriously both to prevent abuses and diversion through Hong Kong as well as to facilitate the smooth operation of legitimate trade and businesses. To us, there is tremendous self-interest to maintain effective control to secure access to higher technology, to facilitate legitimate trade and to

sustain our position as a major trading, financial and telecommunications centre in the region.

## Hong Kong's strategic trade control system

In view of the huge volume of trade, Hong Kong faces a very challenging task to maintain the efficiency of our system so as not to hinder legitimate trade on the one hand, and to exercise effective control over strategic commodities on the other. Our job is doubly challenging since we maintain both import and export controls. I would like to share with members some of the essential features of our system that are designed for our unique circumstances as a major transshipment port.

Hong Kong's strategic trade control system is built on four pillars: a comprehensive legal framework, an efficient licensing system, a rigorous enforcement system and international cooperation.

### *Legislation*

Rule of law and fair play are important pillars to any successful trading community. In Hong Kong, all the control mechanisms imposed on strategic trade are stipulated in the Import and Export Ordinance (I&EO) which dates back to the 1950s and the recently enacted legislation controlling brokering activities – Weapons Of Mass Destruction (Control of Provision of Services) Ordinance (WMDO). All registered companies, regardless of their background, are subject to the control of the laws of Hong Kong. In addition, the control list and end-use control are clearly set out in I&EO and the brokering activities pertaining to weapons of mass destruction are stipulated in WMDO.

### *Licensing*

Hong Kong imposes both import and export controls on all strategic commodities, including cargoes in transit. In other words, even if the goods are imported merely for subsequent re-export, applicants need to apply for both an import license and export license to cover the goods concerned. This import cum export licensing control is useful for keeping track of the movement of goods coming through the territory. It deters sensitive goods from gaining access through Hong Kong as a conduit for proliferation.

In view of the huge trade volume and the nature of import and export trade in Hong Kong, it is necessary for all parties involved to be covered by our control system so that they would all be responsible for their action. Therefore, in our system, we do not specify the parties responsible for importing and exporting controlled commodities. Any parties, once they arrange for importing into and exporting from Hong Kong articles under control, would be subject to our legislative control.

In particular, carriers have a special legal responsibility in our system. We require the carrier to obtain from the importer a valid import license before releasing the goods to the consignee. Likewise, we require the carrier to receive from the exporter a copy of the export license before accepting goods for export. Besides, the carrier is required to return

the copy of the license together with the carrier's manifest to the government for cross-checking. In this way, the carrier serves as an independent third party to verify that the goods have been properly licensed. This provides an additional safeguard for compliance with the licensing requirements.

### *Enforcement*

The third important pillar in our system is Hong Kong Customs' vigorous enforcement. The Customs in Hong Kong are provided with sufficient power to enforce the import and export licensing control. Apart from the general powers of inspection, search and seizure, Customs could issue direction orders to parties concerned to store suspected items in a designated place for further investigation without any time limit. Also, they could enter and search any premises or place without the need for having a search warrant, except that the premises is domestic premises. These powers prove to be powerful tools in effectively carrying out their investigations of cases involving illegal import and export of strategic commodities. For those who are successfully prosecuted for illegally importing or exporting strategic goods into or from Hong Kong, they will be subject to heavy penalties, including a fine of HK$500,000 (i.e. US$65,000) and to imprisonment for 2 years on summary conviction and an unlimited fine and to imprisonment for 7 years on conviction on indictment.

### *International Cooperation*

We recognize that that in the field of strategic trade control, international cooperation is the key to success. While Hong Kong has always been and will continue to be cooperative with others in combating illegal transshipment, we also need the support and trust of the international community's cooperation to make Hong Kong's strategic trade control system effective by sharing with us information and intelligence. As a matter of fact, we have been having close contacts with our major trading partners so as to keep ourselves informed of the latest developments in the international arena. In addition, we will continue to keep our system transparent, accountable and firmly entrenched through closer interagency cooperation with, and secondments of officers from, our major trading partners. Otherwise, it will only be a self-fulfilling prophecy that Hong Kong would not be able to maintain its effective control system.

## Conclusion

In closing, I would like to recap the three messages that I've outlined at the beginning of my commentary.

First, I echo Mr. Efimov's remarks that we need to build up an "equal and non-discriminatory" relationship between members and non-members as proliferation activities see no border and Hong Kong, China offers an example that a non-member party can secure high international control standards through a law-based system and stringent licensing control.

Second, international cooperation against proliferation is not just a tug-of-war between the "haves" and the "have nots." It is a tripartite responsibility among supplier countries, importing countries – and more importantly – the transshipment centres. It takes two to tango but it takes three to make a party of success in the area of non-proliferation. Again, a licensing system with complementary features supporting control over transshipment, like the one adopted in Hong Kong, is essential in sustaining this tripartite cooperation.

Third, the case of Hong Kong, China and our experience clearly demonstrates that a balance between control and trade facilitation can be struck. However, this must be done with good understanding from and close cooperation with trading partners. More importantly, the success of Hong Kong is also built on the encouragement and support of the international community and trading partners, particularly regime members, on the full recognition of our deeds and commitment in maintaining effective control.

Misconception on the role of transshipment centres needs to be clarified by dialogue and rapport. Doubts about non-members should be eased by a better understanding of the controls in operation; and real cooperation can only flourish with trust and support based on a hard-earned reputation for a firm commitment and a working concrete control system. With these beliefs and trust, I offer our experience in exchange for a closer partnership with participants, both members and non-members.

### *Biographical information*

*Mr. Edward Yau is the Deputy Director-General of Trade in the Government of the Hong Kong Special Administrative Region. As the Deputy Head of the Trade Department, Mr. Yau is responsible for Hong Kong's commercial relations and overseeing the trade control systems operated by the Department, which includes textiles export control system, strategic trade control, certificate of origin and import and export licensing system.*

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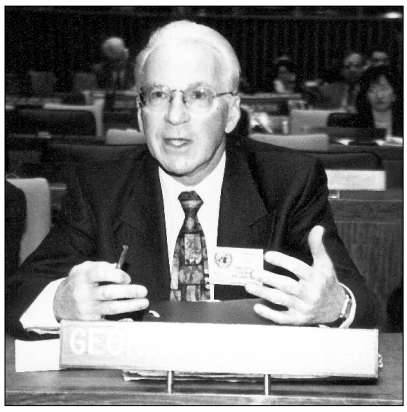
ITALY
ARMENIA

*Georges Le Guelte*



# A Commentary on Further Cooperation

## Introduction

Until 1968, there were no universally recognized regulations to avoid the utilization of imported nuclear equipment for military purposes; each exporting country had its own system, depending frequently on the balance of forces between the supplier and the customer. After the signature of the Treaty on the Non-Proliferation of Nuclear Weapons (NPT), specific measures of export control were necessary because the Treaty, while specifying the conditions of supply for nuclear materials, does not specify how to combine a large exchange of equipment for peaceful purposes and the commitment not to manufacture explosive devices.

Export controls, therefore, are not an objective in themselves; they are only a part of the non-proliferation policy. They must be consistent with all other elements of that policy and they must be modified, when necessary, to match the changing conditions of non-proliferation. Based on those principles, the Nuclear Suppliers Group (NSG) could develop its cooperation with non-Member States by changing its own structures or through specific and more practical actions.

## NSG merging with the Zangger Committee?

The NSG was created in 1975, in the aftermath of the Indian nuclear test of 1974, to remedy a situation in which the supply of sensitive equipment by a country that had not acceded to the NPT was not subject to any international regulation. More precisely, at that time, France and the Federal Republic of Germany (FRG) were selling reactors and enrichment or reprocessing plants to Brazil, Iran, Iraq, South Korea and Pakistan. The first objective of the NSG was to oblige them to abide by the same rules as the signatories of the Treaty.

In fact, all equipment supplied by France or the FRG would be subject to International Atomic Energy Agency (IAEA) safeguards in the importing countries. Therefore, the first common policy on which the members of the NSG reached a consensus was not very different from that decided by the Zangger Committee. The only additional requirement (but it is a crucial one) was to decide that, before granting an export license, each supplier had to verify not only that the exported equipment would be subject to IAEA safeguards in the country of utilization also but that the equipment supplied was consistent with the declared programme of the importing country. After the discovery of the covert Iraqi programme, the NSG added some equipment and techniques to the list drawn up in 1975; a list of dual-use items was created with a different status and, a few months later, the members of the NSG decided to supply the equipment on the Trigger List only to those countries where all nuclear facilities were under IAEA safeguards.

At present, the NSG has reached its initial objectives. The right for the supplier to assess if the equipment requested is consistent with the declared programme of the importing country is very widely (although not unanimously) recognized. The Trigger List and the list of dual-use items are almost official documents, and the full-scope safeguards policy has been endorsed by importing countries that are signatories of the NPT. It can be hoped that in the not too distant future, the main distinction will not be between suppliers and receiving countries, but between those signatories of the NPT that are eager to implement the most efficient policies to avoid the dissemination of nuclear weapons and those few countries that do not accept the general rule.

In the future, it will be necessary to update the Trigger List from time to time, in accordance with the evolution of nuclear techniques. Considering also that an ever-increasing number of importing countries become suppliers, in particular of dual-use items, it would not be unreasonable for the NSG to decide in the future that it would include all NPT signatory countries that accept the export control regulations set up by the NSG (including full-scope safeguards). The NSG could thus merge with the Zangger Committee and become an element of the NPT review mechanisms concerned with nuclear trade, where suppliers and recipient countries could discuss the conditions in which equipment for peaceful nuclear activities can be exchanged. That solution might soften the exchange of views on nuclear trade between various categories of countries, but it would make it almost impossible for the group to reach a consensus on a politically significant decision. That would be a very minor disadvantage as long as the present regulations can stand as they are, but if an unexpected situation requires important amendments, the group would be paralyzed. The decision to merge the NSG and the Zangger Committee requires therefore a difficult assessment of its advantages compared with the difficulties that could result.

## Cooperation with the nuclear industry

It is necessary to involve the nuclear industry as early as possible in the implementation of export control regulations, to permit the industries concerned to understand the purpose of the measures taken. They are conscious that their activity is a sensitive one, they know that in their own interest, not everything should be exported to

every country – even under IAEA safeguards. They should also have an opportunity to express the difficulties that they may face, so that the modalities of implementation could be, if necessary and if possible, designed or amended to take into account the practical problems. At present, very few new nuclear programmes are under way, and the NSG might wish to take advantage of that situation to arrive at a regime widely accepted by industry. Otherwise, when large power projects resume, there could be strong pressure to reduce the export controls, which could have adverse consequences on the non-proliferation policy. So far, the development of peaceful nuclear programmes under IAEA safeguards has never served any military purpose, and it would be extremely detrimental to the non-proliferation regime and to the whole nuclear industry if that happened, especially if it was due to a loophole in the export control system.

If that solution was adopted, the NSG could try to involve the nuclear industry in the export control policy, convince the industrial firms that their own interest is best served by strict measures of non-proliferation, and include them in the implementation of a policy which they would approve. That evolution would certainly be very difficult and very demanding, but it is worth considering, because it would be a very serious situation for all governments and for the nuclear industry as a whole if, when new orders are placed for nuclear facilities and components, a loose legislation on export controls became a commercial argument between competing firms.

## A World Nuclear Trade Commission

The NSG was created to avoid the repetition of the situation prevailing in the Fifties, when the lack of an export control policy allowed India to develop its military programme. The second NSG set of regulations (Part II) was in response to the Iraqi clandestine activities. The NSG has thus proved so far that it was better suited to cope with a crisis than to prevent it. Conceivably, it could attempt to explore the possible difficulties that could arise in the future, it could analyze systematically the loopholes in the present regime of nuclear trade and explore and promote the possible solutions. For example, the most serious threat to non-proliferation may be at present the risk of illicit trafficking, and the NSG might explore the possibility to coordinate or to harmonize the activities of all involved institutions. One may fear also that some of the techniques under development could facilitate the covert construction of enrichment facilities, and the NSG could explore the possible solutions.

## A “sleeping” institution

As was already the case in the past, the NSG could decide that it will not meet regularly, and that its members would convene only in circumstances requiring urgent decisions. That solution would be more easily accepted by a number of member States, permitting it to keep the number of participants to a level that would make it more manageable; it could then adopt its decisions by consensus, even if they required some

delicate political compromise. But it would be a kind of "sleeping" institution, capable of acting in an emergency, but not able to anticipate the next crisis and to try and prevent it.

Whichever solution is finally adopted, it might be of interest for the group to decide more precisely the role it wants to play at present, and what its objectives will be in the future.

Besides new forms of activity which would imply an important evolution in the organization and in the structure of the group, other types of cooperation with States which are not members of the NSG would be possible.

## Exchanges of information on export control regulations

The commitment made by the political authorities of a country to refrain from exporting sensitive items when some preconditions are not met would be useless, if it was not translated into internal regulations, as has already happened. The first field of cooperation is therefore a possible exchange of data, which would allow countries that have no existing legislation on export controls and who may face difficulties in creating it, to set up such legislation. Some countries may wish in particular to circulate the text of their own regulations, and some mechanisms may be useful to provide an accurate translation in the languages of other interested parties. Seminars could also be organized, for example, between legal experts from countries with a long history in the export control of sensitive equipment, and those which have only a limited experience in that field. An exchange of reports on past experience could explain the reasons of existing regulations, point out the difficulties that have been met, and how they were solved.

Such cooperation may be easier on a regional scale, between countries where the legal system is based on comparable principles and mechanisms, and where the problems that arise from a particular situation may be understood more easily. If the relationship between those neighbouring countries is sufficient, it is even possible that experts from a country with more experience could assist their counterparts in other places in drafting their legislation. However, regional cooperation is not sufficient, and it would be desirable to learn which solutions have been found in other parts of the world to solve a particular problem, or which legal provisions have been adopted and how they are implemented.

## Exchanges of information on the administrative machinery

A second topic could be the implementation of the rules; a very fruitful international cooperation could be set up on the administrative machinery responsible for export controls in various countries. Recent examples have underlined the importance of deciding if the Foreign Affairs Ministry or the International Trade Ministry should decide whether an export license is granted, and which other agencies should participate in the preparation of the decision, be consulted, or simply be informed, or have the right to oppose a decision. Organizational matters are not purely technical problems; they imply the balance of forces

existing at a moment in a country, and the solution adopted here may not fit the internal situation in a neighbouring place. However, it may be very useful to know what kind of administrative arrangements exist in other countries and to learn what kind of problems may result from a particular system and what difficulties may have been faced in an other State.

Similarly, it could be helpful to exchange information on the modalities of a dialogue between the administration and the industrial firms, at which stage it is organized, how it is conducted and whether it has proved to be profitable for both parties.

## Education and training of personnel

A third important cooperation could also be devoted to education and training of the personnel involved in export controls. That assistance would be of particular interest to inform and train customs officers on the peculiarities of export controls concerning items referred to in the nuclear or in the dual-use lists. Customs officers are not necessarily familiar with activities linked to nuclear energy so it is important to provide them with at least some basic information about this field, as it relates to their activities; on the importance of sensitive equipment, materials or techniques; and about the way in which they can discharge their responsibilities.

That effort would be of special value in countries of retransfer, where customs officers could benefit from the experience of their counterparts in other countries, perhaps work with them for some time and, for example, become more familiar with the specific vocabulary or with the technical directories or catalogues issued by the manufacturers.

## Assistance on technical information

A fourth field of cooperation could be the access of non-member States to the network of experts who could provide technical information on the equipment on the Trigger List or the dual-use item list. Not all countries have important research or industrial nuclear activities, and it may not always be easy to obtain an indication, for example, on the real nature of some equipment or material on which there may be some doubts or some hesitations. It may happen that a customs officer is presented with a piece of equipment that he cannot identify, and therefore cannot assess if its shipment or its import should be subject to particular conditions, such as an export license. The difficulty can be solved if the customs administration is in contact with an expert and possibly a network of experts, who can study the description of the equipment, perhaps come to the site and assist in its identification. If necessary, the expert can provide an opinion on not only the nature of the equipment, but also on its status as regards export control regulations.

In general, the problem can be solved rather easily in the country where the equipment has been manufactured, and more generally in supplying countries, where a specialist can be found quickly and can provide the information requested. A similar situation may be much more difficult in countries where there is no nuclear industry and no nuclear activities – which may be the case, in particular, in countries of retransfer. There

might therefore be some merit in providing them with a list of centres or places that could provide technical expertise or refer the matter to the appropriate place.

## Cooperation with the IAEA

Export control regulations can only be implemented by the government of the exporting country. This is not just to preserve an outdated notion of national sovereignty; but because each exporting country must be responsible for all operations carried out on its soil. If anything wrong is done that has serious consequences for other countries, or for the international community, the exporting country must take the blame for its inadequate legislation, for an ill-considered export license, or for the error of its customs offices. The rules applicable to the supply of sensitive equipment can be harmonized between a group of countries. Conceivably, these rules could even be decided in the framework of an international body, but their implementation must remain the sole responsibility of each country, and that responsibility cannot be delegated to an international organization that would have neither the authority nor the instruments necessary to verify that the rules are respected.

Although the IAEA can never manage the export control regime, the NSG should develop as much as possible its cooperation with the Agency. All countries involved in trade or retransfer of equipment or materials that could be used for nuclear purposes, or of dual use items, should conclude the additional protocol on the implementation of the IAEA safeguards, adopted in May 1997 by the Board of Governors, and thus commit themselves to inform the Agency of any shipment of such items, specifying the country where they were sent and if possible the end user. Once more, such a decision would be of particular importance for countries of retransfer, since it would permit the Agency to keep track of the equipment concerned. If, for any reason, the signature of the protocol is at risk of being delayed or deferred, each State should at least endeavour to inform the Agency, on a voluntary basis, of each shipment of an item on the lists, and be prepared to provide additional indications that might be useful to the IAEA.

The NSG could also encourage all countries to conclude the additional protocol, and ultimately to consider the desirability of making it a condition of supply.

## Surveillance of radioactive sources

Finally, a sixth field of cooperation could be suggested, not in relation with export controls, but aimed in particular at illicit trafficking. In that respect, particular attention should be paid to radioactive sources. Fortunately, most illegal operations identified so far were concerned more with radioactive sources than with nuclear materials. It should be added that, at least before the accident at Tchernobyl, almost all known casualties resulting from the peaceful uses of nuclear energy were due to radioactive sources and not to the operation of nuclear facilities. It may even be that the actual number of accidents due to the unauthorized manipulation of radioactive sources was larger than the number officially

recorded, since deaths attributed to unknown factors or other origins were in fact the consequences of improper handling of stolen sources.

On 25 September 1998 the IAEA General Conference adopted resolution GC(42)/Res/12, which provides for the preparation of an international convention by which all signatories would commit themselves to organize, on their territory, a strict control on the export of radioactive sources. In all countries, theft or diversion of a source would therefore be a criminal infraction with a penalty attached, and some measures should be taken (for example, detection devices at the border) to detect an illegal transfer out of the country.

In addition, one can imagine that there could be an exchange of information on the existence, in some countries, of an administrator that would record sources when they are sold or when they enter the country, identify the user, and keep track of each source until it is safely disposed of. Conceivably, the international cooperation could also include possible assistance to those countries that would wish to create a similar system on their soil.

## Conclusion

Finally, two remarks on matters related to the activities of the IAEA. They are not linked to export controls policy, but rather to the consistency of the non-proliferation regime, and to the efficiency of the NSG.

After the discovery of the Iraqi clandestine programme, it was felt necessary to widen the scope of the IAEA safeguards and to provide the Agency with additional instruments to try to identify possible non-declared activities. To that effect, inspectors should, in the future, be in a position to assess all data that may be of some use for a nuclear programme, compare all pieces of information that they can receive on the activities of a particular country, and examine whether they are consistent with the programme declared by that same country. One could imagine that the IAEA should receive all types of data of interest for a nuclear programme. It is, therefore, rather puzzling to realize that the information collected in the framework of the Comprehensive Test Ban Treaty (CTBT) will be gathered by a different international organization, working under strict confidentiality, and that the data received will not be forwarded to the Agency. It is probably difficult for the layman to understand why a piece of information indicating that a country might be preparing a nuclear test is withheld from those interested in determining whether the same country actually complies with its obligation not to manufacture an explosive device.

Similarly, and as mentioned earlier, export controls are closely linked to non-proliferation, and it would be very useful for the IAEA to co-ordinate all initiatives taken to facilitate the implementation of export controls. Any cooperation requires the assistance of a secretariat to organize meetings or seminars, set up education and training programs, and to dispatch questions and answers.

A special tribute should be paid to the organizers of this Seminar for the excellent preparation and to the Permanent Mission of Japan in Vienna for the remarkable work they

have done as the NSG Point Of Contact. But it is not their responsibility to act as the Secretariat of the NSG, and it is troubling to consider that, in the absence of such an institution, very few countries will take the initiative of forming new cooperations and that most of the possibilities mentioned here will not go beyond the idea stage.

The political reasons (namely the opposition of some importing countries) which, in the past, did not permit the IAEA to play a part in the implementation of the export controls policy are well known. One can only hope that in the future, differences of views on that problems can be ironed out and that this anomaly can be corrected.

### Biographical information

*Georges Le Guelte was engaged in nuclear international relations in 1964, when he joined the International Relations Division, in the French Commissariat à l'Energie Atomique (CEA). He was primarily responsible for bilateral relations, export controls and non-proliferation.*

*In 1978, he became Secretary of the Board of Governors and of the General Conference in the IAEA. In that capacity, he was also, from 1978 to 1980 the Secretary of the International Nuclear Fuel Cycle Evaluation (INFCE). He left the Agency in 1982.*

*Back in France, he spent a few years in the French Planning Administration where he was responsible for industrial development, then in the "Institut National des Sciences et Techniques Nucléaires," and in the French nuclear safety authority, where he was in charge of international affairs.*

*In 1989, he was appointed Deputy Director of International Relations in the CEA, and retired in 1996. He is the author of "Histoire de la menace nucléaire"( Paris, Hachette 1997) and of a number of articles in various publications.*

*William Reinsch*

# The Future of Export Controls in International Nuclear Non-Proliferation

## Introduction

Controlling the proliferation of weapons of mass destruction is the foremost international security challenge of the next century. With the exponential global diffusion of information and technology, it has become increasingly easy for pariah States and terrorist groups to obtain whatever they need to develop weapons and delivery systems with awesome destructive capabilities. Further, consistent with the traditional principles of supply and demand, the cost of acquiring the needed technology, equipment and materials to build and deliver such weapons has declined substantially as the availability of the tools to make them has increased.

Throughout history, advances in technology have always been a two-edged sword, providing great good to society as well as having the potential to inflict monstrous evil when misapplied. As always, the challenge of civilization is to harness technological advances for the betterment of humankind while minimizing the potential that such advances will be deployed for nefarious purposes.

Export controls will continue to play a key role in any regime to control and manage the risk of proliferation of nuclear weapons. To understand that role in the future, we can look to the past and the present.

## Nuclear export controls

Ever since the end of the World War II, export controls have provided a critical means to ensure that technologies, equipment and materials that can be used to develop nuclear weapons are carefully restricted. However, over time it has become clear that nuclear material, equipment, and technology could be misused and that existing controls

required strengthening. Identifying critical items that had to be controlled because of their potential use in weapons applications became an ongoing activity of the United States and the major nuclear supplier nations, reflected in an evolving list of such items. The major supplier nations recognized the importance of consensus in creating and maintaining that list and its essential role in the development of the Nuclear Supplies Group (NSG) in an effective control regime.

## List review and harmonization

As a member of the Nuclear Supplies Group (and also the Zangger Committee), the United States has participated in the ongoing consensus building process to ensure that the list of controlled items remains updated and refined periodically to reflect changing global technical developments and the realities of international commerce. The NSG is one of several non-proliferation regimes in which members share a common understanding on how export controls should be interpreted and implemented. Today, all of the non-proliferation regimes meet regularly to ensure that members share a uniform interpretation of the technical parameters of the items that are subject to control as well as to seek common ground on guidelines under which items will be approved or denied for export.

Strengthening the nuclear non-proliferation control regime, while ensuring the free flow of commerce for peaceful purposes when the risk of diversion to nuclear weapons programs is acceptably low, remains an ongoing challenge. The challenge is especially high when, as in the United States, responsibility for nuclear export controls is shared among several agencies. In the U.S., the Departments of State, Defense, Energy and Commerce, and the Nuclear Regulatory Commission have significant roles in nuclear export control. Since I know the Department of Commerce's role best, I shall emphasize that role in explaining why I believe that export controls will continue to have a strong place in national and multinational nuclear control. Such regimes have certain essential components which I will address in turn.

## Information sharing and licensing cooperation

The international availability of the tools needed for nuclear weapons development is greater now than it has ever been before. For example, some of the same machine tools sought by developing nations to enhance their manufacturing capabilities and that are available worldwide, like those used in automobile production plants, can be adapted to produce components for nuclear weapons and their missile delivery systems. Since potential proliferators will continue to shop the global marketplace for the items they need, information sharing and licensing cooperation will remain cornerstones of the NSG and other multinational non-proliferation regimes.

From an operational perspective, license applications to the Department of Commerce, for example, for the export of nuclear controlled, dual-use items, are reviewed with a presumption of approval only when we are satisfied that the items intended for

export won't be used directly in or diverted to nuclear weapons applications. So that no member of the NSG – or other non-proliferation regimes – may undercut a partner's denial by shipping the same or similar item to that same end user, NSG members have agreed to inform each other of denials and to consult with each other before making a contrary decision. The need to share information, especially about export denials, won't go away; the future effectiveness of the NSG will continue to depend on the willingness of NSG members to do so to consult with each other about their decisions.

## "Catch all" controls

"Catch all" controls will also continue to be an essential component of the NSG regime: it simply is not possible, neither is it desirable, to maintain an exhaustive list of controlled items. Thus, for example, the Department of Commerce has operated on the longstanding premise that the business community has an obligation to apply for a license when proposing to ship any items to a sensitive nuclear facility – regardless of the export's technical specifications or export control classification. This "catch all" control recognizes that it isn't practical or desirable to list and require licenses for the export of every item that can make a material contribution to a nuclear weapons program. However, when shipping to a facility that may be engaged in weapons development, we want to review all items that might be going there. At present, about one-third of the license applications we receive that are reviewed for nuclear non-proliferation reasons are for items that are not listed on our control list. Clearly the "catch-all" concept is here to stay and will be a critical element of our overall non-proliferation export control system for years to come. I'm pleased to note that most members of other non-proliferation regimes, including the Australia Group and the Missile Technology Control Regime, have also adopted the "catch all" concept, thereby attesting to its value in controlling weapons proliferation.

## Compliance

This "catch-all" control is well understood by the U.S. exporting community due to our extensive outreach efforts. And, of course, outreach is always critical to the success of any export control regime. The business community has to understand both its obligations and rights under the system and it is incumbent upon those who impose the regulations to ensure that they are easy to understand. In recognition of our obligation to ensure that our exporters are fully informed of their rights and responsibilities, I have recently announced a new U.S. domestic compliance program initiative known by the acronym LEAP – License and Enforcement Action Program. U.S. business is now on notice that we are renewing our efforts to ensure program compliance. As a first step, we are standardizing the conditions we apply to licenses. Licensing conditions are sometimes necessary to make certain approved items are in the correct location and used as designated in the license application. And when a license carries conditions of approval, exporters are required to notify other parties to the transaction of those conditions and to obtain a written acknowledgment from the end user overseas that they have been informed of the conditions.

We are increasing the number of pre-license checks and post-shipment verifications we conduct, and we are auditing companies that operate under so-called Special Comprehensive Licenses – a kind of bulk license available to companies with strong internal control systems. Audits of exports that do not require an individual license will also be initiated to make sure that the items exported are truly eligible for a license exception.

And our outreach efforts will expand through on-site company visits and multi-city seminar programs targeted to all the parties involved in an export transaction, from freight forwarders and distributors to trading companies, to ensure that our regulations are clearly understood by the business community. These efforts will include a number of Export Enforcement Conferences presented by "Business Executive Enforcement Teams," or BEETs. This program, begun in 1991, is part of our effort to prevent export violations by educating and expanding contacts with U.S. business. This program of half-day forums held throughout the United States educates corporate officials about their responsibilities under U.S. export control laws, and provides them with the opportunity to address questions to export enforcement officials from all U.S. agencies. BEET participants explore ways for U.S. business and enforcement personnel to work cooperatively to prevent violations and identify projects of proliferation concern.

## Intangible technology

There are some controls that the United States implements that are not widely accepted by other countries. One of the most notable is our broad- based program for licensing the export of intangible technology. We do so not only as part of our nuclear licensing regime but as a fundamental precept of our overall export administration system. The transfer of information via conversations, visual inspection or other intangible means may require an export license when such information can enable the recipient to develop controlled equipment, materials or technology.

What makes our program comprehensive is that we often require licenses for such transfers even when they take place within the United States. Accordingly, many high technology firms are required to file an export application with us before they can release certain controlled technical data to foreign nationals. Many of our firms consider this program to be excessively intrusive. However, we live in the high tech information age where some of the most sensitive data can be transmitted without a written record. So if we control the export of technology to a foreign country, we also control the transfer of technology to nationals of that country in the same manner, on the grounds that they do not have permanent resident status in the United States and are expected to return home with the information they acquire here. We believe that this review of the bona fides of non-permanent foreign residents eliminates certain high risk persons who might seek to illegally divert technology critical to the development of weapons of mass destruction.

## Unilateral controls and sanctions

The United States also implements unilateral controls, even when these controls are not as effective as those that are multilaterally agreed upon and implemented. We have also been willing to impose unilateral sanctions on firms and, when necessary, nations who violate international norms of behavior, even if these sanctions place U.S. companies at a competitive disadvantage. As you might imagine, companies in our country who see their marketing opportunities limited by these unilateral actions view them as both unfair and ineffective. From the U.S. Government's perspective, we impose unilateral controls and sanctions only in limited circumstances, many of them required by law; we take the view that we will not contribute to nuclear proliferation even if other countries seek to undermine our efforts.

## Other elements of an effective nuclear non-proliferation regime

In the final analysis, we realize that even the most rigorous export control system can only be one element of an effective campaign to stem the proliferation of nuclear weapons. We have long recognized that an increasing number of countries have the indigenous capability to develop these weapons without outside assistance. Therefore, as part of any credible nuclear non-proliferation program, nations need to be open to international inspections that help promote transparency and compliance. In this regard, we consider the monitoring and accounting work done by the International Atomic Energy Agency (IAEA) to be a critical component of any nuclear non-proliferation effort. This model, established early on in the nuclear area, is now being copied in the chemical and biological arenas as well.

In all of our non-proliferation regimes, the intent is to ensure that dual use technology, equipment and materials are used for peaceful purposes. As this process unfolds, we want to ensure that our export control efforts do not undermine the competitiveness of our leading edge industries by putting company confidential information at risk during inspections, or by limiting an industry's ability to market products in the international arena for legitimate civil end uses. So we have a delicate balancing act to administer, because the United States – like a number of our trading partners – has huge commercial equities in the chemical, biotechnology, pharmaceutical and nuclear electric power industries. The economic health and overall technological progress of these industries depends on their ability to conduct business without undue government regulation.

## Peaceful uses of nuclear energy

I want to emphasize that the United States has been a vigorous proponent of the peaceful uses of nuclear energy since those earliest days of civilian use of nuclear energy – since the Atoms for Peace days. The peaceful uses of nuclear energy have benefited developed and developing nations alike. Worldwide, there are 442 nuclear power plants in 33 countries supplying 17% of the world's electric energy. For several nations, nuclear power represents the most viable option to secure adequate electricity to support and sustain

people and industries in the near future. Further, the peaceful uses of nuclear energy are not limited to power production.

Advances in nuclear technology have resulted in the successful treatment of disease and in the development of medical products that have eased the suffering of hundreds of thousands of people worldwide. Nuclear research has also contributed to our efforts to protect the environment. Nuclear isotopes and isotopic techniques help track pollution, monitor global warming, document climate change, and assist in the development and management of water resources. The U.S. nuclear industry is in the forefront of many of these efforts, and we support the export of nuclear tools and applications that can contribute to an improvement in the quality of human life. The export of nuclear related technology should not be controlled at the expense of sharing its many useful civil applications with other nations.

## The future of export controls

A generation from now the world will be a much smaller place as the electronic links forged through the use of communications technology via satellite, the Internet, and technologies as yet unheard of, will bring nations and their peoples closer. While the ease with which we will be able to communicate with each other may bring greater understanding and lessen global tensions on issues of common concern, it also affords the opportunity for proliferators to share information that could bring about the catastrophic destruction of nations.

The day may come when this communications revolution will result in a world united in its efforts to secure a lasting peace, and nuclear energy will be known only for its contributions to our collective well-being. Until that day arrives, however, our responsibility is to ensure that sharing nuclear-related technology for the good of humanity does not lead to the destruction of the world we are trying to create. While it is difficult to predict the kinds of challenges we in the export control community will be facing in the future, our present export control regimes do provide a template on how to successfully approach the challenge of export controls in the years ahead.

I've already touched on two of the critical components of future control programs: outreach and compliance. Making the export control rules clear and accessible to those affected and ensuring that they comply with regulatory restrictions has been and will continue to be key to successfully combating nuclear proliferation. Last year, the Department of Commerce held 80 export seminars for over 6500 business representatives. And there were 115 international trade-related events that we participated in last year in both the public and private sectors that reached an additional 6100 participants. In 1999, we expect to increase our participation in domestic and international export control seminars to ensure that those most affected by our controls are also those that are the most knowledgeable about them.

I believe three more elements in our present export control program will become even more vital to our non-proliferation efforts of the future: program focus, adaptability, and multilateral cooperation.

Program focus will continue to be a challenge. Beyond the more obvious items, like nuclear fuels, assessing where to establish a control limit on technology with both civilian and military uses is a challenge now that will become even more difficult in the future. We believe an answer to this challenge is to sharpen the focus of our export controls. Narrowing the list of licensed items to technology with defined nuclear-related end uses, coupled with international "catch all" controls on all other items, ensures that *any* technology that could contribute to nuclear proliferation is subject to control, while legitimate trade is unaffected. We believe the burden that an export license requirement imposes should be limited to truly significant technology. But to ensure that any item that is used in support of prohibited nuclear activities – no matter how technologically insignificant – is subject to a validated export license, we must collectively agree to the imposition of an international "catch all" control standard that carries with it stringent penalties when a violation occurs.

Defining what items should be subject to a validated license requirement in the future will also call for program adaptability. Over time, as technology advances, the list of items useful to a proliferator may change in focus, and the list of so-called choke point technologies – technologies necessary for the production of weapons of mass destruction – may grow to include items that are not subject to nuclear controls at present. Control programs must be adaptable to changes in targeted proliferation activities to be a credible deterrent.

I am referring here to both lifting and imposing controls as new and important non-proliferation initiatives are put into effect. The lifting of controls on oscilloscopes to all but a few destinations is a recent example of how export controls can be reassessed in the light of broader non-proliferation context and technological innovation, coupled with new, wide-ranging consumer applications. With the advent of the Comprehensive Test Ban Treaty (CTBT), it became desirable to review the advisability of controlling these items since almost all countries have pledged not to test nuclear explosives either through their obligations to the Treaty on the Non-Proliferation of Nuclear Weapons (NPT) and now through the CTBT and unilateral pledges.

And when action is required, we must have the collective political will to make the appropriate changes. In this regard, I would like to note that the issue of intangible technology has been a recent topic of discussion in both the Nuclear Suppliers Group and the Missile Technology Control Regime. We are encouraged by steps that our trading partners have taken to adopt controls over intangible technology transfers.

And finally, multilateral cooperation will continue to be the single most important aspect of any national export control program. Global treaty arrangements, like those behind the formation of the Chemical Weapons Convention (CWC) and the Biological Weapons Convention (BWC), will become the basis on which cooperation on non-proliferation will advance in the years to come. The CWC is founded on the premise that, given the domestic capability to manufacture chemical weapons held by many nations, an

international agreement to use these capabilities only for legitimate civil applications is necessary to limit the spread of chemical weapons. Inspections of industrial facilities – similar in many respects to those carried out by the IAEA – are an integral part of the CWC compliance program. Likewise, the international community is in the process of developing a legally binding compliance protocol for the BWC that likely will include a regime of inspections for facilities that have the capability to produce biological weapons agents. So we can see that the formula for non-proliferation lies in export controls plus global treaty arrangements whereby nations agree to allow the international community the right of on-site inspection of both military and commercial facilities. As nations come together in agreement on the need for non-proliferation measures to protect, support, and defend themselves against the threat of weapons of mass destruction, the global will to use these export control tools must evolve.

And we must encourage those countries who are not members of our non-proliferation regimes to adopt controls similar to ours. Our department has devoted considerable time and effort to assisting those nations that have asked for our help in developing credible export control regimes. And the international regimes themselves have joined in this effort by holding transparency seminars that describe how and why non-proliferation controls have developed, and provide guidance on how nonmember nations may join us in combating the threat of weapons of mass destruction. Some nations have opted to adopt effective export control regimes, and have petitioned and successfully joined us as regime members. Since its inception in 1974, 29 nations have formally joined the six original members of the NSG – twenty of those countries have joined since the NSG's formal establishment in 1992. Others are still developing the legal and regulatory basis necessary to establish non-proliferation controls. Whether multilateral membership is sought or not, there is a place for every nation in the world community of countries dedicated to nuclear non-proliferation, and we encourage our fellow regime members to assist nonmember nations in whatever way they can to develop the regulatory structure necessary to support our shared non-proliferation goals.

## Conclusion

In conclusion, I would like to note that we have spent considerable time and resources in the last 50 years trying to perfect dual use controls, to ensure that they meet the challenges of changing technology and a changing world. While we have yet to achieve that perfect balance between the control and promotion of exports, we do know this: There are likely to be few new initiatives in the future that can be as successful in preventing the spread of nuclear weapons as our adherence in the present to the non-proliferation goals of the past. In the United States, we are taking steps to reaffirm that the nuclear non-proliferation obligations we undertook in the past are honored in the present to ensure peace and prosperity for future generations, and we challenge those nations that share our nuclear non-proliferation goals to do the same.

***Biographical information***

*Mr. William A. Reinsch has been Under Secretary for Export Administration, U.S. Department of Commerce, since 1994 and is charged with administering and enforcing the export control policies and the anti-boycott laws of the U.S. government. He has been responsible for various international assistance programs for a wide range of countries wishing to implement an effective export control policy within their government. From 1977-1991, Mr. Reinsch served consecutively as senior Legislative Assistant to the late Senator John Heinz and to Senator John D. Rockefeller, IV. He received a B.A. degree in International Relations from The Johns Hopkins University and an M.A. degree from The Johns Hopkins School of Advanced International Studies.*

*Hiroyoshi Kurihara*

# Evolution of the Non-Proliferation Regime and the Future Of Export Control Systems: A Japanese View

## Introduction

The subject of Session 4 is to consider the future of export controls in international nuclear non-proliferation. Within this topic one can argue the subject from various standpoints, and since my area of expertise is in safeguards, non-proliferation, physical protection and nuclear material control, I would like weigh my presentation heavily toward the issue of non-proliferation. I will cover the following four points. First, a brief historical review of the global non-proliferation regime; second, the most recent evolution of the non-proliferation regime in the Post-Cold War era, which we are now in; third, my personal view on the possible global non-proliferation regime in the 21st Century; and finally, some remarks on the Nuclear Suppliers Group (NSG) Guidelines.

In my view, the global non-proliferation regime is an evolutionary system. The non-proliferation regime has evolved according to changes in political, social, economic, security and technological environments. Although Professor Baer and Mr. Stratford have already explained the history of non-proliferation, I would like to present my interpretation of this history. The history of non-proliferation in the world can be categorized into three periods, namely, the pre-NPT (Treaty on the Non-Proliferation of Nuclear Weapons) period, the NPT-period and the Post Cold-War period.

There is a difference of opinion about when efforts toward non-proliferation actually began. Some people consider that the concept of non-proliferation, namely, to combat the creation of new nuclear weapon states (NWS), began immediately after the bombing of Hiroshima and Nagasaki. Others think that the real efforts started when the utilization of nuclear energy was opened to the whole world by the famous “Atoms for Peace” declaration by U.S. President Eisenhower in 1953. In any case, bilateral agreements were the major effective control system in preventing the spread of nuclear weapons to non-nuclear weapon States at this initial stage.

As Mr. Stratford pointed out, nuclear supplier States wanted consent rights over transferred items, including nuclear materials and other materials, equipment and facilities based on the agreement. Typically, these consent rights included the prior consent of suppliers before reprocessing, alteration of form, enrichment and transfer to a third country. Bilateral safeguards were one of those supplier's rights. I do not recall any provisions in connection with physical protection activities in the bilateral agreement of the early era. Consideration of physical protection emerged at a later stage.

## Development of the IAEA and NPT

After establishment of the International Atomic Energy Agency (IAEA), suppliers' rights on bilateral safeguards were gradually transferred to the IAEA. The IAEA developed its own procedures throughout the 1960s, and this was documented as INFCIRC/66/Rev.2. I would point out that the IAEA had only accepted to administer safeguards right from supplier States, but other various suppliers' rights were never transferred to other entity. When I was a young government official, I had the task of seeking approval from the U.S. and other suppliers on items to be imported from overseas countries into Japan. The word MB#10 was a magic word for us at that time, because without the consent of the U.S. for the transfer of nuclear technology in the form of MB#10, we would have been unable to develop nuclear energy in our country. So, I would say that bilateral control was the major tool for maintaining non-proliferation in the world in the pre-NPT period – though I do not diminish the importance of the IAEA and its safeguards implementation.

The creation of the NPT was, in my view, a big evolution. To develop an adequate safeguard system to be implemented under the NPT, the Board of Governors of the IAEA established an ad hoc committee called the "Safeguards Committee." This international discussion began in 1970 and concluded in 1971. I had the privilege of participating on this Committee. The formulation of IAEA safeguards reflected the concept of proliferation held by the international community at that time. Namely, that the next would-be proliferation would come from the developed nations with nuclear power reactors in use and nuclear fuel cycle capability, i.e. West Germany, Japan, Sweden, Italy and so on. This concept clearly shows how the routine inspection system was formulated. The intensity and frequency of Agency inspections correlated with the quantity and quality of nuclear material possessed by each facility. A small facility such as a research reactor would receive an Agency inspection once a year. On the other hand some Japanese facilities accepted more than 100 to 200 person-days of inspections (PDI) per year. The Tokai Reprocessing Plant, under normal operation, received 600 PDI/year.

Today, the NPT is the most widely accepted arms control treaty. But when it was entered into force, some major powers were outsiders. Japan did not ratify it for 6 years; countries of the European Atomic Energy Community (EURATOM) were not quick to ratify it; and France and China did not join it until quite late.

Apart from the NPT, during this period many tools for non-proliferation emerged internationally. The concept of a nuclear weapon free zone was extended not only to the

Latin American region but also to other areas. And as all of you know, the NSG Guidelines were established. The attention of the international community to the physical protection aspects of nuclear material was heightened, so that the IAEA physical protection guidelines (INFCIRC/225) and the Convention on the Physical Protection of Nuclear Material emerged. EURATOM, which had existed prior to the establishment of the IAEA, together with the Argentine-Brazilian Agency for Accounting and Control of Nuclear Material (ABACC) in Latin America (which was quoted by Mr. Delgado yesterday) improved confidence on a regional level.

## End of the Cold War

The end of the Cold War brought another evolution to the global non-proliferation regime. Because of the expansion of the targets of non-proliferation, the global non-proliferation regime had to re-think the effectiveness of the various norms and, in most cases, added new measures.

What new situations brought about a re-thinking of the existing norms? This is my personal view, but I believe there were three new situations in the Post Cold-War period. The first is connected with the existence of undeclared nuclear activities and materials in non-nuclear weapon states (NNWS) which were party to the NPT. This led to the proposal of the 93+2 program by the IAEA Secretariat and materialized as the Additional Protocol to the Safeguards Agreement (INFCIRC/540). Also, the NSG added dual-use items to the Trigger List of export control guidelines (INFCIRC/254, Rev.3 Part2).

The second new situation was connected with nuclear weapon states. The progress of nuclear disarmament in the U.S. and Russia resulted in a vast amount of nuclear materials that were no longer needed for national defense purposes. The question of how to dispose of this weapon usable material in a safe and secure manner is of vital importance not only for nuclear disarmament but also for non-proliferation. The international community is worried about loose or weak controls of nuclear material in Russia. If plutonium and high-enriched uranium are clandestinely transferred a third country, this heightens the risk of proliferation. To combat this very serious problem various multinational efforts have been initiated: the Nun-Lugar Initiative; the Lab-to-Lab agreement and other arrangements by the U.S.; the IAEA and other countries' cooperation to improve MPC & A (Nuclear Material Protection, Control and Accounting) of Former Soviet Union Republics, the US-Russia-IAEA Trilateral Initiative to apply IAEA verification to the Russian storage facilities for nuclear material that has been released from defense purpose, i.e. Mayak; ISTC (International Science and Technology Center) to combat "brain drain" of Russian nuclear scientists; and the action plan of Moscow Nuclear Safety and Security Summit to fight illicit trafficking of nuclear material.

So far, the major concern of the international community regarding the proliferation of nuclear weapons has been the idea of national diversion; that is, diversion by the Government or State as a whole. However, because of the social and economic confusion that prevailed after the end of the Cold-War, international and national terrorist activities increased – for example, the Aumu Shinrikyo cult in Japan and the bombings at the World

Trade Center and in Oklahoma City in the U.S. We need, therefore, to pay much more attention to the subnational diversion of nuclear material.

This is the third new situation. Taking this new environment into account the IAEA amended its physical protection guidelines (INFCIRC/225 Rev.4) quite recently; there is also a movement in the international community to discuss the effectiveness of the Physical Protection Convention. Further, a convention against nuclear terrorism is now under discussion in New York.

## Terrorist Activities

So far, I have enumerated the various components that constitute the global non-proliferation regime. In addition to the measures I described above, I should also mention other norms that are related to non-proliferation. In my personal view, the Fissile Material Cut-Off Treaty (FMCT) is very important from both the non-proliferation and the nuclear disarmament perspectives. The Comprehensive Test Ban Treaty (CTBT) also has merits for both non-proliferation and disarmament. In addition, various non-governmental activities like the Program for Promoting Nuclear Non-proliferation (PPNN), the Council for Security Cooperation in the Asia Pacific (CSCAP) and activities of academic institutions are also very important. The plutonium guidelines, which were recently formulated by five NWS and four NNWS – namely, Belgium, Germany, Japan and Switzerland – are also significant.

As one can see, many forms and instruments now exist. When we consider the future of the global non-proliferation regime in the 21st century, what kind of situation would be desirable? Do we need so many different instruments, or do we create one consolidated overall norm, which governs everything? And what would be the role of the export control regime within this overall scene? This is the third and last part of my presentation.

## Defense in depth and pluralism

Professor Baer dreams of a multilateral non-proliferation convention. Next week in New York, Ambassador Imai of Japan will present his idea of a framework agreement that would include nuclear-disarmament commitment, non-proliferation obligation, peaceful uses of nuclear energy etc. as Annexes of the Agreement to the "Tokyo Initiative," which was created after the Indian and Pakistani nuclear tests by the initiative of then Japanese Prime Minister Hashimoto. It is my belief, however, that the future global non-proliferation regime should be governed by the principle of the "defense-in-depth" concept and the "pluralism" concept.

The defense-in-depth concept, which is now widely accepted in the area of nuclear safety, sets up several layers of safety barriers in nuclear facilities so that if one barrier is defeated, the next barrier would survive. The global non-proliferation regime has four layers of barriers. These layers are international/multinational, regional, bilateral and, last

but not least, unilateral and/or domestic. The NPT, the CTBT, the FMCT, the Physical Protection Convention, and IAEA safeguards are typical examples of international barriers. Regional barriers include the Nuclear Weapon Free Zone (NWFZ), EURATOM, and ABACC. The Bilateral Governmental Agreement and the Trilateral Initiative on Mayak are bilateral examples.

Unilateral barriers include various guidelines such as export control guidelines, physical protection guidelines, and plutonium guidelines. This forum of the NSG is, in my view, an interesting combination of the first and fourth layers. Activities of the NSG, such as this international seminar, are apparently activities performed by a multinational body. The revision of the Guidelines, the Trigger List, etc. is also a multinational activity. But the implementation of export control is, as eloquently described in the presentation of Mr. Reinsch, the responsibility of each State, and therefore, it belongs to the unilateral layer.

It may be considered very complicated and ineffective to have so many different measures, but as a safeguards expert, I prefer redundancy. Non-proliferation is such an important political objective that every effort should be made to insure the adequacy of the whole system.

You will note that there are several different measures in a layer. Because the world situation differs so widely region by region, State by State and moment to moment, you may need the most suitable measure based on a specific time, place and event. For example, the NPT is widely accepted as the non-proliferation norm but we have three major outsiders. If the situation does not permit these outsiders to come into the regime, what other instruments can be considered? Maybe it is an FMCT or a regional confidence building mechanism. At any rate, I believe that there is no panacea to satisfy the non-proliferation objective worldwide. Therefore, we must consider the “pluralism” concept.

## Strengthening the non-proliferation regime

From this analysis, I propose several ideas to strengthen the global non-proliferation regime in other fora. I do not want to repeat them again. Instead, I would like to touch upon the future improvement of export control systems. Clearly, the effort toward greater transparency is a very important issue. Mr. Reinsch’s keynote speech, which describes the efforts of the U.S. to strengthen the outreach program, provides a very good example of how serious the U.S. community is about having an effective system. Prof. Baer stressed the importance of flexibility and incentives to improve the system for the NSG, and Dr. Reinsch commented that adaptability is a key parameter of a successful control program. I am glad that the NSG now has a mechanism in place for discussion and for improvement of their own system. Any system should have quality-control elements (Plan-Do-Check-Action), and I recommend that such functions be strengthened in the NSG.

I am not so deeply involved in the implementation of the NSG Guidelines, so although I may be mistaken, I have some comments on how to improve the quality of the Guidelines. So far the discussions seem to have been centered on the Trigger List items. This is natural and as it should be. But we must also check the adequacy and quality of the

requirements that appear in the main sections of the Guidelines – specifically, the physical protection requirement, which is written in Paragraph 3 and in Annex C of the document INFCIRC/254/Rev.3/Part 1. As I mentioned earlier, the IAEA's physical protection guidelines were revised due to social, security and technological changes. Some of changes were rather important – especially the interpretation of the categorization table, the State authority's role in adequately controlling physical protection, and some requirements on transportation. I would recommend, therefore, that the NSG hold a meeting of experts to review the adequacy of the present requirements for physical protection and, if necessary, to revise Annex C. Regarding safeguards requirements, I think some years from now that two different kinds of States, in connection with the Additional Protocol, will exist in the world. I do not know whether the NSG interprets the safeguards requirements in paragraph 4 of the Guidelines as automatic acceptance of the Additional Protocol, or whether the NSG differentiates between those countries who have implemented the Additional Protocol and those countries who have not. Clarification is needed.

## Conclusion

In conclusion, I believe non-proliferation is an important political objective. Achieving this objective requires that political, economic or defense/military measures – as well as technical and institutional ones – be taken. Regarding technical and institutional measures, I believe safeguards or verification of nuclear material, an export control system for nuclear-related items, and physical protection of nuclear material and facilities are the most important. So I hope that in the near future there will be closer contact and cooperation between the organizations that are conducting such important functions – namely the IAEA and the NSG.

### *Biographical information*

*Mr. Hiroyoshi Kurihara has been Senior Executive Director and Chief Executive Officer of the Nuclear Material Control Center since 1995. He has been involved in nuclear non-proliferation, safeguards and physical protection matters for over 25 years. After graduating from Chiba University in 1958, he joined the Ministry of Agriculture and Forestry as a researcher. In 1964 he was transferred to the Science and Technology Agency (STA) of the Japanese Government where he was involved in the promotional and regulatory activities of nuclear energy development.*

*From 1972 to 1975 Mr. Kurihara was First Officer of the Division of Development, Department of Safeguards with the International Atomic Energy Agency. He was a major contributor in the creation of the IAEA Guidelines on the Physical Protection of Nuclear Material (INFCIRC/225).*

*In 1975 he returned to Japan and assumed various posts in the STA, including Director of the Safeguards Division where he established the National Safeguards System of Japan, which was required for Japan's participation in the Treaty on the Non-Proliferation of Nuclear Weapons (NPT) in 1976.*

*From 1978 to 1982 Mr. Kurihara worked at the Embassy of Japan in Washington, D.C. as Science Counsellor, then as Minister. From 1982 to 1985 he again served as Director of the Nuclear Safety Division, the Deputy Director General of the STA. From 1985 to 1988 he returned to the IAEA where he was Director of the Division of Development and Technical Support, Department of Safeguards. On his return to Japan from Austria in 1988, he became Comptroller General of the Power Reactor and Nuclear Fuel Development*

*Corporation (PNC), then Executive Director of the Board in 1990. Mr. Kurihara is also a Special Assistant to the Minister of State for Science and Technology and an advisor to the Atomic Energy Commission of Japan.*

*David Albright*

# A Commentary on the Future of Nuclear Export Controls

## Introduction

My talk is based on my experience at the Institute for Science and International Security (ISIS), which is a non-governmental organization that assesses how countries acquire nuclear weapons. In this process, we often encounter information about violations or loopholes in export controls. My comments will build on that experience rather than any particular expertise in export controls.

Nuclear export controls survive in a complex environment of competing factors, many of which have been discussed here and seem to be a permanent fixture of the debate about whether to strengthen or weaken export controls. Companies want to sell their wares with little interference from national authorities. Others, including non-aligned governments, argue for universal, unrestricted access to nuclear technology as a right guaranteed by the Non-Proliferation Treaty. Yet, sales of certain items can threaten the security of a state, therefore requiring tight state controls over any exports of these items or, in some cases, bans on their export altogether.

The relative political strength of each of these competing factors has often determined the strength of particular export control regulations or laws. By setting the political climate, public opinion and the media have played a critical role. Media revelations that exports ended up in another country's weapons of mass destruction program have swayed many governments to strengthen their export controls. On the other hand, pressure from corporations has led governments to reduce controls.

Over the last 50 years, nuclear export controls have grown stronger. The 1990s have witnessed tremendous growth in the Nuclear Suppliers Group (NSG) membership, a broadening of controlled items and improvements in national export control systems, particularly over the regulation of dual-use nuclear items.

Throughout the nuclear age, a central purpose of export controls has remained the same, namely slowing or preventing certain countries from gaining the ability to make nuclear weapons. Since the beginning of the Atomic Age, every country except the United States and perhaps Britain has been "stung" by export restrictions or controls. However, fewer countries are targeted by nuclear supplier export controls now than in the past. The growth in the number of members of the NSG reflects the tendency to target fewer countries and to disseminate more broadly nuclear and nuclear-related items in the world.

Despite controversy over the application of export controls, the world is safer because of them. Consider a few examples:

Given the tensions between Taiwan and China, we are fortunate Taiwan does not have uranium enrichment plants or civil reprocessing facilities separating plutonium;

The absence of a South Korean reprocessing facility eases the already formidable task of ensuring that North Korea does not operate reprocessing facilities;

What if France or another supplier had provided a replacement research reactor to Iraq in the early 1980s? Would Iraq have acquired nuclear weapons during the Iraq/Iran War or by the time of the Persian Gulf War?

It is no longer relatively easy for proliferant countries to acquire nuclear dual-use items that allow them to put together nuclear weapon programs.

There are many more examples where export controls or bans have created a safer world. Most countries will acknowledge, at least to themselves, that their security has been increased thanks to the export control regime.

These successes do not mean that nuclear export controls are without weaknesses or contradictions in their application. In some cases, countries facing export bans have dramatically increased their own domestic capabilities to develop and manufacture nuclear technologies. Other countries have accelerated their efforts to evade export controls, searching for weak links in the international control regime. Several speakers have also pointed out that export controls cannot prevent proliferation. In essence, export controls buy time for other remedies to work.

Nonetheless, export controls, with all their shortcomings, are necessary to reduce the chance that civil nuclear technologies will be used to make nuclear weapons. They will continue to be important in the future.

## Improving export controls

Export controls remain effective only if they are constantly improved. Otherwise, they will, in fact, become weaker. Those who seek to evade export controls restrictions never sleep. For example, an Iraqi document from 1986 advertised a lecture sponsored by the Iraqi Atomic Energy Commission at Al Tuwaitha Nuclear Research Center on "deceptive technological policies" to further overseas, illicit procurement efforts.

Improvements in export controls need to be justified by a thorough analysis of the current situation. Toward this end, major supplier countries must continue or enlarge their own in-house, technical analysis of trends in nuclear-related exports. They need to continually ask themselves critical questions: What items are being asked for? What items are being denied? Which items are being illicitly sought? What are the threats that export controls must address? Armed with this type of assessment, countries can better determine the effectiveness of export controls and the Nuclear Suppliers Group.

Another priority is to improve national export control regimes in countries that have lagged or encountered problems in implementing more effective systems. A special focus should be Russia, which needs to better implement its nuclear and nuclear-related export controls. Other former Soviet republics are even further behind Russia in creating the legal infrastructure for export controls, much less in implementing controls. Members of the NSG will need to continue to assist in this endeavor.

In promoting improvements in the former Soviet Union, however, we must keep in mind that almost all supplier countries have had problems in controlling exports at one time or another. Almost all suppliers have been embarrassed by illicit or questionable exports. The detailed revelations by Iraq about its suppliers from throughout the West and Japan should serve as a reminder that few are without sin.

Consider the following example involving two well-known companies in Germany. In the fall of 1987, Iraq discussed with these companies the procurement of a $200 million foundry that would be able to melt, purify, cast, and machine refractory metals. Iraq specifically mentioned tungsten, but it actually planned that the foundry would be used to process uranium into nuclear weapon components. The Iraqis planned to locate the foundry at the Al Atheer site, which was to be its secret site to make nuclear weapons.

Khadir Hamza, the then head of the nuclear weaponization program, wrote in a trip report:

> *During the negotiations, we suddenly realized that the companies were willing to sell these technologies to us. At the same time, they warned us they were complicated, expressed astonishment that we were entering such a field and indicated that the cost would be high. At first, this move on the part of the companies was puzzling for us, since it seemed the companies were prepared even to disregard the requirement for an export license by making special arrangements and packing the equipment under covers, which made the export process seem natural. They even indicated that they knew the equipment was not for peaceful purposes.*

In the end, Iraq did not accept the foundry offered by these companies. It feared that the "turn-key" job would have allowed the Germans to learn the location and true purpose of the Al Atheer facility.

After 1989, however, Iraq used this offer as a guideline to procure equipment for a foundry piecemeal from several countries. It also used the design of the foundry supplied by the Germans to design its uranium processing building at Al Atheer.

## Export controls and safeguards

Export controls do not exist in a vacuum. They complement safeguards for example. This complementary relationship is more pronounced now with the development of advanced safeguards, in particular the Model Protocol, or INFCIRC/540.

In simple terms, International Atomic Energy Agency (IAEA) safeguards can provide assurance that illicit or suspect exports are not being used to conduct banned nuclear activities. Depending on only safeguards or export controls would result in a far weaker non-proliferation regime.

Although the Model Protocol includes a requirement for states to declare to the IAEA their exports and imports of key nuclear items, it does not require them to report on dual-use nuclear items. However, the protocol does require a non-nuclear weapon state to declare a broad range of activities that may involve the import of dual-use items. For example, a state subject to the Protocol must describe the scale of operations for each location engaged in the manufacture of centrifuge rotor tubes or the assembly of gas centrifuges. To make a maraging steel centrifuge rotor, the state may have obtained maraging steel or a flow-forming machine from abroad. Thus, an additional condition that would require the reporting to the IAEA of the export and import of certain dual-use items would usefully strengthen safeguards and simultaneously provide additional verification of the end-use of controlled exports.

The synergy between export controls and safeguards can work both ways. The NSG could help strengthen safeguards by sharing with the IAEA the denials of exports the NSG now routinely collects. The IAEA could then compare that information to a country's broadened declaration and other information it may possess about that country.

These are just a few recommendations that show how the NSG and the IAEA can benefit from increased cooperation. Such cooperation is likely to become more important in the future.

## Know-how

The detailed declarations by Iraq following the Persian Gulf War about its foreign procurement efforts confirm the immense value of sensitive information about nuclear

weaponization and fissile material production, particularly uranium enrichment technologies. Access to classified blueprints, design books, or "tricks of the trade" can determine the success or failure of a clandestine nuclear weapons program in a developing country. Protecting sensitive information or controlling "intangible technology" are thus key goals, and will need to be an increasing focus of the NSG and domestic export control regimes.

Proliferants, however, also seek open or declassified information. As a result, there is a need for the international community to ensure that sensitive information is not inadvertently declassified. To be sure, the United States and other nuclear weapon states classify too much information, particularly given that the Cold War is long over. Declassification of certain types of information bolsters transparency and arms control efforts with no risk to national or international security. Declarations of total military stocks of fissile material fall into this category. Some classified information can significantly benefit scientific and commercial ventures. Here, governments must carefully weigh the risks and benefits of declassification.

In the process of declassification, however, countries do not protect the same information or protect it to the same degree as others. Classification rules vary enormously from country to country. There are already cases of one country undercutting another as it declassifies or releases information to the public. In addition, research results may be published openly in one country even if the results are considered classified in another.

Once information is declassified and released, it can now spread faster than ever. Public collections are better identified and indexed. As everyone knows, the Internet serves to accelerate dissemination.

Some web sites even collect and organize open information related to nuclear weapons. We have all heard of, or visited, web sites containing information on making nuclear weapons. Fortunately, ISIS government surveys have not found any web sites that provide enough information to make nuclear explosives or weapons. Information on these sites, however, is growing and including more information from throughout the world. There is also a tendency at some of these sites to correct mistakes. Although no site visited by ISIS was a "cookbook" to make a nuclear weapon, the sites provide an efficient starting point for a would-be bomb maker.

Although information relevant to nuclear weapons production will continue to enter the public domain, more needs to be done internationally to prevent inadvertent or misguided declassification. One initiative under consideration within the United States to address this problem is the creation of international information guidelines. Such guidelines would list, in an unclassified manner, which information should be protected.

These guidelines would help prevent governments from inadvertently releasing sensitive information by creating a uniform list of protected information. Guidelines would also bolster the norm against the spreading of proliferation-sensitive information, reinforcing efforts by the NSG to control certain types of technology or technical assistance.

Currently, the effort to achieve such guidelines is focused on the nuclear weapon states. Britain, France, and the United States are already discussing such guidelines. China and Russia need to become part of these discussions. The next priority is discussing these guidelines with non-nuclear weapon states with advanced industries or nuclear programs. The NSG would be expected to play a role in the implementation and further development of such guidelines.

## Conclusion

I close by emphasizing the importance of building stronger relationships among the different elements of the non-proliferation regime. Sometimes, this regime is described as a set of pillars. A more fitting analogy may be a controlled item in INFCIRC/254/Part 2, namely carbon fibers. If each carbon fiber represents a different element of the non-proliferation regime, then the entire regime is akin to the twisting together of the fibers. Because the fibers are close together, the relationships between different elements of the regime can be uncomfortable. But when wound together, or working together, the thread is much stronger than any single fiber.

### *Biographical information*

*Mr. David Albright is President of the Institute for Science and International Security (ISIS) in Washington, D.C. In addition, he regularly publishes and conducts scientific and technical research. Prior to founding ISIS, Mr. Albright worked as a Senior Staff Scientist at the Federation of American Scientists and as a member of the research staff of Princeton University's Center for Energy and Environmental Studies. In the early 1980s, he taught physics at George Mason University in Virginia. He has served as a consultant to the Environmental Policy Institute, the congressional Research Service and the International Task Force on Prevention of Nuclear Terrorism.*

*Mr. Albright cooperated with the IAEA Action Team from 1992 until 1997. In June 1996, he was invited to be the first non-governmental inspector of the Iraqi nuclear program In 1996, Mr. Albright was appointed to the Department of Energy (DOE) Openness Advisory Panel.*

*He is a contributing editor of the Bulletin of the Atomic Scientists and has served as a guest editor of special topical editions of the magazine.*

*Mr. Albright holds a Masters of Science in physics from Indiana University and a Masters of Science in mathematics from Wright State University.*

*Hans Blix*

# Chair's Closing Remarks

The 2nd NSG International Seminar on the Role of Export Controls in Nuclear Non-Proliferation (2nd Seminar) is drawing to a close and it remains for me, as Chair of the Seminar, to "wrap up" the proceedings.

I cannot give a comprehensive summary of the discussions that have taken place in this distinguished forum, let alone produce an agreed conclusions paper. I can however, pick out some ideas and questions that have been raised at the Seminar, as I see them, and some assessments, which I have made. In doing so, I would hope to provide a basis for all of us, as we go our separate ways this evening, to carry forward and further build on the dialogue that we have developed during the last two days.

The primary purpose of the Seminar was to create greater transparency about nuclear export controls within a framework of dialogue and cooperation among the participants as requested by the 1995 NPT Review Conference. The subject of export controls is neither easy nor straightforward – and I think it should be appreciated that, in the selection of our speakers and participants, the organizers have tried to ensure that the subject should be tackled from different perspectives.

I would like first to thank our four Keynote Speakers: Professor Alec Baer, Mr. Richard Stratford, Mr. Andrey Efimov and Mr. William Reinsch for sharing with us their wealth of knowledge and experience of export controls in nuclear non-proliferation. Their presentations were excellent and, in every respect, illuminating. May I also express my appreciation for the way in which our eight individual commentators have contributed their experience and thoughts to the discussion and, again the high quality of their presentations. Finally, I would like to thank the Seminar participants – recognized experts in the field, representatives of governments, industry and non-governmental organizations – who have spontaneously raised many relevant issues and provided additional information for the benefit of us all.

Now to my impressions of the substantive discussions. Several important issues were raised, some of which were not directly dealing with export controls but relevant to the broader question of nuclear non-proliferation.

## Nuclear Disarmament

There is a wide, presumably universal wish to see a quickened pace of the dismantling of nuclear warheads. Only then will the Treaty on the Non-Proliferation of Nuclear Weapons (NPT) be considered to be fully implemented by all parties. Entry into force of the Comprehensive Test Ban Treaty is awaited with eagerness and the substantive discussions on a "cut off" treaty should start.

## Trafficking in nuclear material or in material relevant to weapons of mass destruction

Export restrictions required under the NPT only determine which exports are legal and which are not. They draw the dividing line; they do not deal with violations. From the viewpoint of non-proliferation, however, physically preventing violations of export restrictions and coping with the situations arising after violations is important. More cooperation could take place in this area. Thus, perhaps the reporting to the International Atomic Energy Agency (IAEA) of cases of trafficking in nuclear material and sources could be expanded to cover also nuclear equipment, heavy water, etc.

## The role and importance of export restrictions among the efforts to prevent nuclear proliferation

It was recognized that there are several barriers to discuss within the topic of non-proliferation.

The political security climate globally, regionally and locally is the most important factor influencing governments. A State's perceived security interests are crucial for its policy.

It was recognized that IAEA safeguards are of importance in deterring and detecting any diversion of nuclear material. With the Board of the IAEA having approved some 40 additional safeguards agreements to date, the strengthening of the safeguards system is well underway and is much welcomed. It was suggested that further acceptances should be encouraged as a part of the present non-proliferation efforts.

Export restrictions were regarded as highly important among non-proliferation efforts. While no one believed that export restrictions could, in themselves, prevent proliferation, it was felt that they might delay and impede proliferation providing valuable time for the implementation of other measures. Export restrictions were also deemed to be indispensable in most exporting countries to gain public acceptance of the export of any nuclear items.

The issue most discussed concerned the way in which export restrictions are harmonized between exporters and how the interests of importers and others could

be taken into account better. The Zangger Committee was set up to define in technical terms the requirements placed by Article III of the NPT. Although it consists of exporters and is thus a limited group, its work and conclusions have been discussed by the NPT Review Conferences and have received endorsements. The NSG was set up by a number of exporters to promote the objectives of the NPT a little more broadly, and perhaps to act more swiftly. It has the capacity to adapt quickly. It was stated that Nuclear Suppliers Group (NSG) Trigger Lists, especially those dealing with dual-use, were not, in fact, controversial. Problems remain, however, in that the NSG seeks to determine export conditions without direct consultation with those affected, i.e. the importers. Although it was recognized that, in the last resort, it is a sovereign decision of each country to determine what it will allow by way of exports – and the NSG does not contradict that principle – nevertheless the consultation and harmonization among many exporters raise the question of how to take into account the interests and possible treaty rights of others.

## The importance of intangible technology transfer was stressed

## Several suggestions were made as to how to improve misunderstandings and suspicions concerning the NSG

The two Seminars were designed to improve knowledge and understanding and to provide an opportunity for discussion and questioning.

One idea was to create a "Friends of the NSG" comprising States that may not wish to become members but who support the work and are ready to influence.

Another idea was to expand membership so that it becomes more representative of the community of least developed countries (LDC). While the NSG was not considered a closed shop, it was deemed to be an exclusive one.

The most radical idea was to move the whole NSG mechanism into the IAEA. It was realized, however, that discussions about the applications of the NSG Guidelines in individual cases would be difficult within a universal organization like the IAEA.

More seminars, perhaps issuing a newsletter, was another idea.

It was also suggested that outreach to industry was important to enable it help with and participate in the efforts against nuclear proliferation.

## Expansion of substantive work

Catch-All Controls relating to all exports to particular companies or installations were favored by some.

Establishing links between the NSG and IAEA, with the NSG sharing information with the IAEA on applications that have been rejected.

A good deal of discussion was devoted to the so-called proliferation principle followed within the NSG, i.e. that a particular export, even though it might satisfy the lists, can still be examined to see whether it raises proliferation concerns.

While it was made clear that no embargoes exist or can exist, as each country decides for itself in the last resort, nevertheless it was clear that the discussion between members of the group allows for mutual influencing, as arguments and data are advanced.[1]

It was understood that while a country's adherence to the NPT and acceptance of full-scope safeguards raise a presumption of green light, nevertheless as we have been shown by the case of Iraq it can only be a rebuttable presumption. Different views exist as to how such rebuttals might be advanced.

It was clear to me that one cannot term the NSG a cartel in the sense of a group that restricts sales in order to make an economic profit for themselves. The main aim of the NSG is to restrict exports in order to reduce the risk of proliferation rather than gaining commercial disadvantage. The procedure is, however, designed to avoid the situation in which one supplier can refuse an export license and then find that another supplier grants it.

I feel that we have had a full, though rather compressed, examination of policy and implementation issues on the role of nuclear export controls. We have all learned something. I believe therefore that the 2nd Seminar has achieved its stated goal of furthering transparency about the role of export controls in nuclear non-proliferation.

[1] The assertion that an export decision is a sovereign right of NPT Member States is misleading and needs to be qualified. The sovereign right has to be weighed against the NPT commitments to ensure right of access to peaceful material and to refuse access to weapons-related material in full accordance with NPT undertakings. In other words, by freely choosing to accede to the Treaty, States have agreed to limitations in two regards: to their right to decide what they should not export and what they should not deny export. This is similar to WTO undertakings in which the sovereign right of States in deciding their policies on import, export and subsidies become subject to WTO provisions. (H.E. Ambassador C. Nasseri)

Suggestion that the State to which export is denied be informed of the reasons and provided with suggestions that could facilitate import. Particularly useful to refer to the mechanism in Provision 9 of the P & O, according to which any skepticism about non-proliferation by a State Party should be addressed to the IAEA with supporting evidence. If the affected State agrees to scrutiny and investigation, the IAEA can make the final conclusion which could be binding to States concerned. (H.E. Ambassador C. Nasseri)

**2nd NSG International Seminar on the Role of Export Controls in Nuclear Non-Proliferation**

**8 – 9 April 1999**
**United Nations Headquarters, New York**

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