

Chapter 1

Evolution of the Nuclear Non-Proliferation Regime 1945–1970

Introduction

The measures put in place to deter the spread of nuclear weapons, more commonly known as the nuclear non-proliferation regime, comprise an integrated network of unilateral, bilateral, regional and multilateral treaties and other standard-setting arrangements. Collectively, these measures provide a comprehensive framework for the behaviour of states, international organizations and other actors in the nuclear area. These measures constitute a global regime which has been evolving since the end of the Second World War.

Early proposals for control of nuclear energy

In January 1946, the United Nations (UN) General Assembly passed a resolution which established the UN Atomic Energy Commission (UNAEC). The remit of the UNAEC was to make proposals for the elimination of nuclear weapons and the use of nuclear energy for peaceful purposes under international control. On 14 June 1946 the United States submitted the so-called Baruch Plan to meet the Commission's objectives. The Plan proposed the following arrangements:

- international managerial control or ownership of all potentially dangerous activities;
- an international organization which would have the power to control, license, and inspect all other atomic energy activities;
- an international organization which would have the duty of fostering the beneficial uses of atomic energy; and
- an organization which would perform research and development tasks in order to keep it in the technical vanguard of atomic energy, so as to enable it to recognize misuse of atomic energy.

The Baruch Plan was never implemented, due to radical differences between the United States and the Soviet Union over how to proceed. During discussion of the Plan, the United States moved to introduce unilateral legislation aimed at maintaining its monopoly over 'the use of atomic energy for the national defense'. The McMahon or Atomic Energy Act was passed on 1 August 1946. This Act established the United States Atomic Energy Commission (USAEC) as the sole owner of all fissionable materials and facilities in the United States and prohibited all exchanges of nuclear information with other states.

The issue of international atomic energy control was revisited following President Eisenhower's 'Atoms for Peace' speech on 8 December 1953. It was stressed that the new proposal was not a disarmament plan, but a bold initiative to open the benefits of atomic energy to the world community. The main features of the proposal were to:

- encourage a global study of the most beneficial uses of atomic energy for peaceful purposes;
- foster the view that the spread of nuclear weapons could be contained more appropriately by international cooperation in the peaceful uses of atomic energy under an international safeguards system; and
- reduce the destructive capacity of the existing nuclear weapon stockpiles and promote positive dialogue on the central issues confronting humankind.

'Atoms for Peace' had both a bilateral and a multilateral dimension. Between 1954 and 1962, when 'Atoms for Peace' was officially terminated, the United States initiated several bilateral technical assistance programmes involving research reactors, nuclear fuels and equipment. International negotiation on implementing the 'Atoms for Peace' proposal began formally after the 9th UN General Assembly, once the United States had allayed the Soviet Union's concerns about the level of international control envisaged over national nuclear installations. These negotiations culminated in a Conference on the Statute of the International Atomic Energy Agency (IAEA), the name given to the new international organization, held at UN Headquarters in New York during September–October 1956. Following agreement at this Conference on the IAEA Statute, the Agency was established on 29 July 1957.

The IAEA, EURATOM and nuclear safeguards

The IAEA turned out to be a different organization to the one envisaged in the Baruch Plan or by President Eisenhower in his 1953 speech. From the outset, the IAEA was unable to fulfil the role of reducing the stockpiles of fissile material in the three then-existing nuclear-weapon states (the Soviet Union, United Kingdom and United States). Neither did membership of the IAEA place any obligation on a state to: refrain from making nuclear weapons (as France did in 1960) or exploding a nuclear device (as India did in 1974); accept safeguards on its own nuclear activities; or, require that safeguards be applied to its nuclear exports.

Until the mid-1960s, opposition from the Soviet Union and India prevented the IAEA from implementing a comprehensive safeguards system on a global scale. Moreover, early hopes that nuclear power would be utilized in abundance and create a large-scale demand for fissile material were disappointed. Consequently, there was little demand for the IAEA's services as a supplier of nuclear fuel. The decision by the United States to supply plant and fuel to Western Europe under European Atomic Energy Community (EURATOM) safeguards also kept the IAEA out of the only region of the world, outside the United States, where nuclear energy was destined to play a significant role. However, in 1959 the IAEA did begin applying *ad hoc* safeguards to natural uranium that Canada supplied to a research reactor in Japan.

It was not until 1961, when INFCIRC/26 was agreed, that the Agency formally began implementing a safeguards system. INFCIRC/26 was the IAEA's initial safeguards document and provided the organization with its first uniform safeguards procedures, which were applicable only to reactors with less than 100 megawatts thermal output (MW[th]). In 1964 this document was revised to include reactors over this limit.

On 1 January 1958, Western Europe also established a regional nuclear organization within the framework of the European Communities (EC). EURATOM has since had the task of co-ordinating nuclear energy development within the EC and implementing a regional safeguards system to ensure that nuclear materials are not diverted 'to purposes

other than for those which they are intended'. The EURATOM safeguards system covers all civilian nuclear energy activities in the Member States of the EC (now European Union [EU]), including those of France and the United Kingdom. The military programmes of the latter states are excluded from EURATOM safeguards coverage, however.

The move to internationalise atomic energy, and promote it for peaceful use, also affected United States' domestic legislation. In August 1954 the United States passed another Atomic Energy Act which paved the way for the USAEC to negotiate bilateral cooperation agreements to encourage the global dissemination of atomic energy for peaceful purposes under effective safeguards.

In 1958, the United States amended the 1954 legislation to allow the transfer of information related to United States' nuclear weapons to enable their delivery by allies within the North Atlantic Treaty Organization (NATO) in time of war. The Act also stipulated that more detailed transfer of information and technology relating to these weapons would be made available to those allies which had already made 'substantial progress in the development of atomic weapons'. Only one agreement was signed at first as a result of this latter provision, the 1958 Military Agreement for Cooperation between the United States and the United Kingdom, an agreement with France following much later.

As the IAEA's new safeguards system evolved during the early 1960s, the United States began transferring to the IAEA its bilateral safeguards responsibilities for nuclear plant and materials it had supplied to other states. The IAEA also gained new status during this period as a result of an increase in the demand for nuclear power and as orders for new reactors increased.

Fissile material cut-off and nuclear testing prohibitions

The idea of a fissile material cut-off was first discussed in international forums in late 1953, albeit camouflaged as President Eisenhower's 'Atoms for Peace' plan. At this time a main concern of the United States was that the Soviet Union would soon possess sufficient fissile material, and thus numbers of nuclear bombs, to have a capability of delivering a surprise 'knock-out blow' on United States' military forces before they had time to mobilise. One obvious way of slowing down the Soviet Union's capacity for this action was to constrain the amount of fissile material it had available for military explosive purposes. A key element of Eisenhower's speech was, therefore, a proposal that both the Soviet Union and the United States should transfer significant quantities of fissile material to the proposed IAEA for use in peaceful applications of atomic energy. This would have the consequence of reducing the fissile material available to the Soviet Union for military use.

This proposal was only implemented in a very limited form. It was replaced from 1956 onwards by a series of more overt United States' proposals for a total halt in the production of fissile materials for military purposes. These were seen as part of a package of measures to freeze, and ultimately reverse, the 'nuclear arms race'. The idea was to start with a Comprehensive Test Ban Treaty (CTBT) and a fissile-material cut-off, to follow this by measures to halt the production of additional nuclear weapons, and finally to initiate a phased dismantling of national stockpiles. Given

the United States' superiority in the number of weapons and in the size of its stockpile of fissile materials at this time, the proposals were greeted with little enthusiasm by the Soviet Union.

From 1958 onwards the issue of a fissile-material cut-off was relegated to a secondary position as attention focused on negotiating a CTBT. This latter measure was viewed as a means for both halting the development of more powerful atomic and thermonuclear weapons and stopping the pollution caused by radioactive fallout from atmospheric testing.

The negotiations on a CTBT occurred in the context of a Soviet Union–United Kingdom–United States moratorium on nuclear testing from 1958 to 1961, and against a backdrop of calls for these three nuclear-weapon states, the only ones in existence at this time, to engage in nuclear disarmament.

These CTBT negotiations did not result in an agreement. The primary barrier throughout the negotiations was how to verify compliance. There was a failure to agree a system of inspections and controls that could provide adequate assurance of detection of violation, especially through underground testing.

In 1963 the Soviet Union, United Kingdom and United States did agree the Partial Test Ban Treaty (PTBT) — also known as the Limited Test Ban Treaty (LTBT) — which prohibited nuclear testing in the atmosphere, in outer space and underwater. This meant that future testing by those states which signed the PTBT had to be conducted underground. The only prohibition on underground testing contained in the Treaty was in circumstances where a nuclear explosion caused 'radioactive debris to be present outside the territorial limits of the State under whose jurisdiction or control' the test was conducted.

By the time the PTBT was opened for signature in 1963, the potential significance of a fissile-material cut-off had been reduced further. The measure was no longer regarded as a means of constraining the Soviet Union–United States nuclear arms race. However, since 1964 several developments have occurred favourable to the negotiation of a fissile-material cut-off. The first has been the creation of both the IAEA and EURATOM nuclear safeguarding systems. In the case of EURATOM, all fissile materials in the member states are theoretically owned collectively. However, as noted earlier, the two nuclear-weapon states in the EU, France and the United Kingdom, have a right to hold back military materials from EURATOM safeguards. In the case of the IAEA, the desire to have 'equality of misery' in the safeguarding of civil nuclear facilities led the nuclear-weapon states to make voluntary offers to the IAEA to place some of their civil facilities under safeguards. This has resulted in the IAEA applying safeguards to some reactors, enrichment and reprocessing plants in these states. In addition, the experience of the implementation of IAEA safeguards to reactors and other fuel cycle facilities has provided convincing evidence that clandestine diversion of significant quantities of fissile materials from safeguarded facilities is very difficult, if not impossible.

Nuclear-weapon-free zones (NWFZ) and measures of restraint in specific environments

Several measures to prevent the nuclearization of specific environments and geographical areas were developed in the period up to 1970. The first was the Antarctic Treaty of

Evolution of the Regime 1945–1970

1959, which, among other things, included provisions for banning all nuclear explosions and the disposal of radioactive waste in the Antarctic. This Treaty served as a model for later measures because it sought to limit the spread of nuclear weapons by preventing their introduction into specific areas (a 'non-armament' provision).

The first NWFZ covering a populated geographic region was created by the Treaty for the Prohibition of Nuclear Weapons in Latin America (the Tlatelolco Treaty), which was opened for signature in 1967. Article I of this Treaty obliges its parties to use all nuclear materials and facilities on their territories exclusively for peaceful purposes and to prevent:

- (a) The testing, use, manufacture, production or acquisition by any means whatsoever of any nuclear weapons, by the Parties themselves, directly or indirectly, on behalf of anyone else or in any other way, and
- (b) The receipt, storage, installation, deployment and any form of possession of any nuclear weapons ...

The Tlatelolco Treaty also has two Additional Protocols for signature by non-Latin American states. Protocol I contains provisions for those which have territories in the geographical remit of the zone. Protocol II involves undertakings by those states which possess nuclear weapons.

The original verification provisions of the Treaty involved the establishment of a regional organization to ensure compliance, the Agency for the Prohibition of Nuclear Weapons in Latin America (called OPANAL after the acronym of its title in Spanish). OPANAL was granted the right to conduct special inspections in the zone, while the Treaty also obliged its parties to negotiate safeguards agreements with the IAEA to ensure peaceful use of nuclear energy within their territories.

In 1967 the Outer Space Treaty was signed. This contains an explicit prohibition obliging its signatories 'not to place in orbit around the Earth, install on the moon or any other celestial body, or otherwise station in outer space nuclear weapons or any other weapons of mass destruction' (Article IV).

Negotiation of the Treaty on the Non-Proliferation of Nuclear Weapons (NPT)

Between 1958 and 1961, Ireland sought to draw attention within the UN to the dangers posed by additional states acquiring nuclear weapons. As a consequence, in 1961, the UN General Assembly adopted what became known as the 'Irish Resolution'. This called for measures to limit the spread of nuclear weapons to additional countries and for all states to refrain from transfer or acquisition of such weapons.

Negotiation of the text of the NPT was conducted via three distinct channels of communication. The first, and most important, channel involved the Soviet Union and the United States in direct bilateral contacts. The second involved multilateral negotiation on the actual text of the NPT in the Eighteen-Nation Disarmament Committee (ENDC) in Geneva. The third involved the United States and its NATO allies, who were concerned about the implications of such a treaty for consultations on, and planning of, nuclear defence within the Alliance.

Three concerns permeated these negotiations. The first was how to manage the proliferation potential inherent in

the increasing global numbers of large-scale nuclear power plants. The second was how to deal with the issue of the transfer of nuclear devices from nuclear-weapon states to their allies, an issue raised by the United States proposal for a NATO Multilateral Nuclear Force (MLF). The MLF concept envisaged a multinational nuclear force of surface vessels or missile-capable submarines within a NATO command structure which would be distinct from European national nuclear forces. Finally, the provision of adequate verification of the prospective treaty had to be addressed. To the extent that particular states were the focus of discussion, it was industrialized states, such as Germany and Japan, which dominated attention, rather than any states in the developing world.

A breakthrough in the conceptualization of a non-proliferation treaty came as a result of resolution 2028 adopted by the UN General Assembly in 1965. This resolution incorporated five principles for such a treaty:

- the Treaty should be void of any loop-holes which might permit nuclear or non-nuclear powers to proliferate nuclear weapons in any form;
- the Treaty should embody an acceptable balance regarding the mutual responsibilities and obligations of the nuclear and non-nuclear powers;
- the Treaty should be a step towards the achievement of General and Complete Disarmament and, more particularly, nuclear disarmament;
- there should be acceptable and workable provisions to ensure the effectiveness of the Treaty; and
- nothing in the Treaty should adversely affect the right of any group of states to conclude nuclear-weapon-free zone treaties.

Although this resolution provided a conceptual basis for a non-proliferation treaty, agreement on an actual text proved elusive. In the Autumn of 1966, the Soviet Union and the United States began bilateral discussions in an attempt to resolve the outstanding issue of the MLF. Language was eventually agreed early in 1967 which effectively foreclosed on the option of multilateral nuclear sharing within NATO.

Debate within the ENDC throughout 1967 focused on the issue of adequate verification of the proposed treaty. The Soviet Union was concerned that the EURATOM safeguards system would not provide adequate assurance that states in Western Europe would uphold their non-proliferation obligations. Instead, the Soviet Union wanted the IAEA to assume full responsibility for safeguards in the region. Wording was eventually agreed in early 1968 for a specific paragraph in Article III of the draft treaty acknowledging EURATOM's safeguards role under the NPT:

Non-nuclear-weapon States Party to the Treaty shall conclude agreements with the International Atomic Energy Agency to meet the requirements of this Article either *individually or together with other states* [meaning EURATOM, emphasis added] ...

On 11 March 1968 the Soviet Union and the United States presented a joint draft treaty to the ENDC and, following amendments, this was endorsed by the UN General Assembly on 12 June 1968. The NPT was opened for signature on 1 July 1968, and signed on that date by the three depositary states of the Treaty — the Soviet Union,

United Kingdom and United States — and 59 other states. The Treaty entered into force on 5 March 1970.

Security Assurances

During negotiation of the NPT, a major debate occurred over the linkage between nuclear security assurances and nuclear non-proliferation. The non-nuclear-weapon states raised two concerns related to this linkage. The first was that if states were to forgo the nuclear-weapon option by signing the NPT, would alternative arrangements be made available to ensure their security? The alternatives discussed at the time were positive assurances of assistance from nuclear-weapon states in the event of nuclear threats and negative assurances from the nuclear-weapon states that they would not use their capabilities against non-nuclear-weapon states. Although demands were made to include assurances of both kinds in the NPT text, these demands were rejected. However, the negotiating parties did agree to include a statement in the last preambular paragraph of the NPT which recalls that, in accordance with the UN Charter, 'States must refrain in their international relations from the threat of the use of force against the territorial integrity or political independence of any State'.

The second concern of the non-nuclear-weapon states was that while allies of the Soviet Union and the United States were covered by nuclear guarantees from the latter states as part of their alliance relationships, states in the non-aligned world had no such security guarantees. These concerns manifested themselves in a desire on the part of the non-aligned states for global nuclear assurances, especially negative ones. This was because they feared that the existing nuclear-weapon states would use nuclear weapons on their territories.

There were other complications which made negotiating any security assurances difficult at this time. Many non-aligned states were concerned that their non-alignment would be compromised unless the security assurances were provided by all the nuclear-weapon states through a neutral body such as the UN, rather than on a bilateral basis. Moreover, because not all the non-nuclear-weapon states were going to become parties to the NPT, debate focused on whether the assurances should be reserved for those that were going to sign to encourage those outside to join, or whether all non-nuclear-weapon states should be offered assurances because, as some states claimed, the use of nuclear weapons contravened the 'spirit' of the UN Charter.

To allay the concerns of the non-nuclear weapon states, the three nuclear-weapon states parties to the Treaty, sought a solution outside the NPT. These efforts culminated on 19 June 1968 with UN Security Council resolution 255. This resolution contains positive security assurances committing the Security Council and 'above all its nuclear-weapon State permanent members, ... to act immediately in accordance with their obligations under the United Nations Charter' in the event of a nuclear attack against a non-nuclear-weapon state.

Conclusion

By the time the NPT entered into force on 5 March 1970, the basis of a nuclear non-proliferation regime already existed. It was the entry into force of the NPT, however, which provided the regime with a central international legal foundation upon which further elements could be built. While the nuclear non-proliferation regime might still have evolved further after 1970 without the NPT, it is unlikely that it would have embodied as much international recognition and legal force as it currently displays.