

***Repairing the Regime:  
Stopping the Spread of Weapons of Mass Destruction***

**Appendix I**

**The International Non-Proliferation Regime**

The international non-proliferation regime has been constructed over the better part of the 20<sup>th</sup> century and is based upon the premise that the danger posed by weapons of mass destruction grows, and their use becomes more likely, as the number of countries possessing such weapons increases. Moreover, the regime was formed out of the widely held belief that the possession of weapons of mass destruction by some states encourages the acquisition of such weapons by additional countries, further increasing the likelihood of their use.

To address these risks, the international community has developed an interlocking set of treaties, agreements, arrangements and verification tools collectively referred to as the "Non-Proliferation Regime." The regime includes components that address nuclear, chemical and biological weapons, missile delivery systems, and the equipment, materials and technologies needed to produce such weapons.

The regime's components can be placed into three main categories: treaties and agreements establishing norms and legal obligations; tools to verify compliance with obligations; and systems to control the means of producing weapons. Norms against the possession, acquisition or proliferation of weapons of mass destruction and missile delivery systems are traditionally established through multilateral, legally binding treaties. Such treaties exist for nuclear, chemical and biological weapons, but not for missiles. In some cases, the Treaty itself establishes the norm, and in other cases, the legal document codifies a norm that has already been established. Verification of non-proliferation obligations encompassed in these treaties is typically carried out by neutral, third party organizations with the technical assets needed to conduct both routine and special access inspections. Such organizations exist in the nuclear and chemical areas, and one is being contemplated in the case of biological weapons. Lastly, members within the various regimes have established "supplier control mechanisms" that seek to limit access to sensitive technology and equipment to those countries that abide by the other parts of the regime. While these control regimes have been attacked in some quarters as overly restrictive, they have proven effective in slowing the pace of proliferation, if not stopping it completely.

The basic elements of the regime are described below:

**Nuclear Non-Proliferation Regime**

While the Treaty on the Non-Proliferation of Nuclear Weapons (NPT) is its centerpiece, the global nuclear non-proliferation regime consists of a series of interlocking international treaties, bilateral undertakings, and multilateral inspections aimed at halting the spread of nuclear weapons. Other major elements of the regime are the International Atomic Energy Agency (IAEA) and two closely connected export control systems implemented by the key nuclear supplier countries.

**Nuclear Non-Proliferation Treaty (NPT)**

The NPT, which was opened for signature in 1968 and entered into force in 1970, divides the countries of the world into two categories, "nuclear-weapon states" and "non-

nuclear-weapon states." It defines "nuclear-weapon states" as countries that detonated a nuclear explosion before January 1, 1967, namely the United States (first detonation in 1945), the Soviet Union (1949), Great Britain (1952), France (1960), and China (1964). Russia succeeded to the Soviet Union's status as a nuclear-weapon state under the Treaty in 1992. The NPT treats all other countries as non-nuclear-weapon states.<sup>(1)</sup>

Under the NPT:

- Non-nuclear-weapon states party to the Treaty pledge not to manufacture or receive nuclear explosives. (Both nuclear weapons and "peaceful nuclear explosives" are prohibited.)
- To verify that they are living up to this pledge, non-nuclear-weapon states also agree to accept IAEA inspections on all nuclear activities, an arrangement known as "full-scope safeguards."
- All countries party to the Treaty agree not to export nuclear equipment or material to non-nuclear-weapon states except under IAEA safeguards, and nuclear-weapon states agree not to assist non-nuclear-weapon states in obtaining nuclear weapons.
- All countries accepting the Treaty agree to facilitate the fullest possible sharing of peaceful nuclear technology.
- All countries accepting the Treaty agree to pursue negotiations in good faith to end the nuclear-arms race and to achieve nuclear disarmament under international control. (In practice, this applies to the nuclear-weapon states.)
- A party may withdraw from the Treaty on ninety days' notice if "extraordinary events related to the subject matter of the Treaty" have "jeopardized its supreme interests."

All five established nuclear-weapon states are parties to the NPT. The United States, Russia, and Great Britain are the Treaty's depositary states; China and France did not join until 1992. By mid-1999, the Treaty had 181 non-nuclear-weapon state parties, for a total of 186 parties.

The NPT originally entered into force for 25 years, with periodic reviews of the Treaty occurring every 5 years. At the NPT Review and Extension Conference held in New York City in April-May 1995, the parties agreed to extend the Treaty indefinitely without conditions. In addition, they approved a set of principles and objectives to guide the parties during a strengthened review process in the future (see appendix X).

Among the principal states of proliferation concern today, India, Israel, and Pakistan are not parties to the pact. Each has nuclear installations not subject to IAEA safeguards that contribute to its respective nuclear-weapons capability. Iran, Iraq, and Libya are non-nuclear-weapon state parties to the Treaty, but their commitment to the accord is suspect because of their demonstrated interest in acquiring nuclear arms.

North Korea became a party to the Treaty in 1985 but did not agree to accept IAEA inspections of its nuclear activities until April 1992. During the interval, it may have produced and separated a quantity of plutonium sufficient for one or two nuclear weapons. North Korea has not satisfactorily accounted for this material and is not in compliance with its IAEA safeguards obligations under the Treaty because of its refusal

to permit an IAEA "special inspection" of two nuclear-waste sites believed to contain information regarding past production of plutonium. Under an "Agreed Framework" signed with the United States in October 1994, North Korea agreed to resolve these issues at a future date; in the meantime, it has accepted restrictions on its nuclear activities that go beyond its obligations under the NPT, including a freeze on the operation and construction of a number of sensitive facilities.

### **International Atomic Energy Agency (IAEA)**

The IAEA is part of the foundation of the international non-proliferation regime. Created in 1957, the Vienna-based IAEA is an international organization with 126 member countries. Its principal missions are to facilitate the use of nuclear energy for peaceful purposes and to implement a system of audits and on-site inspections, collectively known as "safeguards," to verify that nuclear facilities and materials are not being diverted for nuclear explosive purposes.(2.)

In addition to monitoring all peaceful nuclear activities in non-nuclear-weapon state parties to the NPT, the Agency also monitors individual facilities and associated nuclear materials in non-NPT parties at the request of these states. Thus, even though India, Israel, and Pakistan are not parties to the NPT, several nuclear facilities in each of these countries are subject to IAEA monitoring, and these facilities cannot easily be used to support these nations' nuclear-weapons programs.

Until 1991, in non-nuclear-weapon state parties to the NPT, the IAEA monitored only those facilities declared by the inspected country and did not seek out possible undeclared nuclear installations. After the 1991 Gulf War, however, it was learned that Iraq had secretly developed a network of undeclared nuclear facilities as part of an extensive nuclear-weapons program. This led the IAEA to announce in late 1991 that it would begin to exercise its previously unused authority to conduct "special inspections," i.e., to demand access to undeclared sites where it suspected nuclear activities were being conducted. Subsequent measures were adopted under Program 93 + 2 in two installments. Part 1, implemented initially in 1996, consisted of measures that could be traced to existing legal authority. Part 2 consisted of measures whose implementation would require complementary legal authority. Part 2 measures were approved by the IAEA Board of Governors on May 15, 1997.

The Agency first attempted to conduct a special inspection in North Korea in 1992, but Pyongyang refused to comply with the IAEA's request, triggering a crisis that has yet to be fully resolved. However, the IAEA's new authority has indirectly provided added access for the Agency in Iran. Because an IAEA demand for special inspections carries the implied accusation that a country may be violating the NPT, Iran, anticipating that the Agency might seek special inspections within its territory, has sought to avert the stigma associated with such inspections by agreeing to permit the IAEA to visit any location in Iran on request. The Agency has visited undeclared sites in Iran several times but has not detected any activities in violation of Iran's NPT obligations.

### **Comprehensive Test Ban Treaty (CTBT)(3.)**

The newest element of the regime is the CTBT, a barrier to vertical as well as horizontal proliferation. The conclusion of this treaty fulfilled a preambular commitment of NPT parties to carry through with pledges made in the 1963 Partial Test Ban Treaty "to seek

to achieve the discontinuance of all test explosions of nuclear weapons for all time." Opened for signature in New York on September 24, 1996, the CTBT prohibits nuclear test explosions of any size and establishes a rigorous verification system, including seismic monitoring and on-site inspections, to detect any violations.

The CTBT was negotiated at the Geneva Conference on Disarmament (CD), where decisions normally are made by consensus. India temporarily blocked approval of the treaty in mid-August 1996; it objected to the fact that the treaty did not include provisions demanded by India prescribing a "time-bound framework" for the global elimination of nuclear weapons. India also opposed the treaty's entry-into-force provision, which, in effect, would require India's ratification to bring the pact into force. To circumvent India's veto, Australia introduced the treaty into the UN General Assembly, where decisions are made by majority rather than by consensus. The CTBT was adopted by the UN General Assembly on September 10, 1996, by a vote of 158 to 3 (the negative votes coming from India, Bhutan, and Libya).

### **Nuclear Supplier Control Mechanisms**

Two informal coalitions of nations that voluntarily restrict the export of equipment and materials that could be used to develop nuclear weapons form a third major element of the non-proliferation regime.

Shortly after the NPT came into force in 1970, a number of Western and Soviet-bloc nuclear-supplier states began consultations concerning the procedures and standards that would apply to nuclear exports to non-nuclear-weapons states. The group, known as the NPT Exporters Committee (or the Zangger Committee, so named after its Swiss chairman), adopted a set of guidelines in August 1974, including a list of export items that would trigger the requirement for the application of IAEA safeguards in recipient states. These procedures and the "trigger list," updated in subsequent years, represent the first major agreement on uniform regulation of nuclear exports by actual and potential nuclear suppliers.

Following India's nuclear test in 1974, an overlapping group of nuclear supplier states--but in this case including France, which was not then a party to the NPT--met in London to elaborate export guidelines further. In January 1976, this London group--which became known as the Nuclear Suppliers Group (NSG)--adopted guidelines that were similar to those of the NPT Exporters Committee but also extended to transfers of technology and included agreement to "exercise restraint" in the transfer of uranium-enriched and plutonium-extraction equipment and facilities.

In April 1992, in the wake of the Gulf War, the NSG expanded its export control guidelines, which until then had covered only uniquely nuclear items, to cover 65 "dual-use" items as well. The group also added as a requirement for future exports that recipient states accept IAEA inspection on all of their peaceful nuclear activities. This rule, previously adopted by only some NSG members, effectively precludes nuclear commerce by NSG member states with India, Israel, and Pakistan.

In addition to agreeing to such full-scope safeguards, all nations importing regulated items from NSG member states must: promise to furnish adequate physical security for transferred nuclear materials and facilities; pledge not to export nuclear materials and technologies to other nations without the permission of the original exporting nation or without a pledge from the recipient nation to abide by these same rules; and promise not

to use any imports to build nuclear explosives. Similar rules--apart from the full-scope safeguards requirement--apply to exports regulated by the Zangger Committee, which continues to function, although it has been partially eclipsed by the Nuclear Suppliers Group, whose export controls have been more far-reaching. The members of the two supplier groups are listed, and more detailed discussion is provided, in Appendix F in this volume.

### **Nuclear-Weapon-Free Zones (NWFZs)**

NWFZs complement NPT arrangements because they can be geared to specific regional situations. The growing role of NWFZs as part of the non-proliferation regime was reflected in the draft review document of the 1995 NPT Review and Extension Conference: "the establishment of nuclear-weapon-free zones ... constitutes an important disarmament measure which greatly strengthens the international non-proliferation regime in all its aspects." NWFZs have been established in Latin America (Treaty of Tlatelolco, 1967), the South Pacific (1996), and Africa (1996), and efforts have been made to establish one in Southeast Asia. In some cases, the verification procedures laid out in the NPT have been used to verify compliance with NWFZ agreements, while in others, separate, regional organizations have been established. Such regional bodies have additional confidence building benefits.

### **Chemical and Biological Weapons Nonproliferation Regime**

The proliferation of chemical and biological weapons is an issue of increasing concern in the last part of the 20<sup>th</sup> century. Efforts to prevent the spread of chemical and biological weapons, however, date back to the early 1920s, after the experience with the use of chemical weapons during World War One. While largely symbolic and without verification procedures, the Geneva Protocol for the Prohibition of the Use in War of Asphyxiating, Poisonous or other Gases, and of Bacteriological Methods of Warfare marked the first attempt by states to establish an international norm against the use of weapons of mass destruction. The Treaty, however, did not restrict the ability of states to acquire or store such weapons, and had no verification provision, greatly limiting its impact.

### **Biological and Toxin Weapons Convention (BWC)**

The BWC, which was opened for signature in April 1972 and entered into force in 1975, prohibits the development, production, stockpiling, acquisition, and transfer of pathogens or toxins in "quantities that have no justification for prophylactic, protective, and other peaceful purposes." Additionally, the BWC bans weapon systems and other means of delivery for biological agents. The United States, United Kingdom, and the Russian Federation are the three depository governments for the BWC, which has 142 State Parties and 18 additional Signatories. Review conferences are held approximately every five years, with conference having been held in 1980, 1986, 1991 and 1996. When it entered into force, the BWC was unique in that it prohibited an entire class of weapons. However, the BWC does not contain enforcement or effective verification measures to ensure compliance. An attempt was made to improve the effectiveness of the treaty in 1991, by adopting a number of confidence-building measures, such as requiring

declarations by states regarding past biological weapons activities. The deficiencies in the treaty, however, have remained, as highlighted by recent revelations, including violations of the convention by the Former Soviet Union and persistent concerns about Iraq's past biological weapons activities. These cases, as well as the doubling in number of countries suspected of pursuing a BW capability since the BWC entered into force, have led to doubts in the Convention's utility. Efforts are now underway to negotiate a legally-binding verification protocol to the Convention.

### **Chemical Weapons Convention**

Efforts on creating a chemical weapons treaty were initiated in the early 1970s, soon after the conclusion of the Biological and Toxin Weapons Convention. However, due to difficulties in negotiating compliance and verification issues, little progress was made until 1986, when the Soviet Union agreed to systematic inspections at chemical weapons storage and production facilities, the destruction of production facilities, and declarations and routine inspections at commercial industry sites. In 1987, the Soviet Union not only accepted the principle of mandatory short-notice challenge inspections, but also insisted that this procedure apply to all facilities or locations. The use of chemical weapons during the Iran-Iraq War spurred international attention to the lack of effective means for preventing the acquisition and use of such weapons and provided an important impetus for completing the Chemical Weapons Convention.

Entered into force on April 29, 1997, the Chemical Weapons Convention prohibits the development, production, acquisition, stockpiling, retention, transfer, and use of chemical weapons. The treaty also bans engaging in any military preparation for the use of CW and assisting any other states from engaging in treaty banned activities. The CWC also requires State Parties to destroy any chemical weapons and chemical weapons production facilities under its ownership, possession, or control- all within 10 years after the entry into force of the Convention. Currently there are 126 State Parties to the CWC.

In order to build confidence that State Parties are in compliance with the treaty, the CWC establishes transparency through a verification regime subjecting all declared chemical weapons and production facilities and certain commercial chemical industrial facilities to systematic inspections. The Convention, categorizing chemicals into three "schedules" depending on their applicability for CW programs and for commercial purposes, applies varying degrees of control to these chemicals and their production facilities. Facilities producing chemicals listed in any of the three schedules in quantities in excess of allotted amounts must be declared and are subject to inspections. The CWC also contains provisions for challenge inspections of any declared or non-declared facility.

### **The Australia Group**

The Australia Group (AG) is an informal arrangement among 30 states designed to impede CBW proliferation by harmonizing national export controls on equipment and materials that could be used in chemical and/or biological weapons programs. These restrictions apply to items such as CW precursor chemicals, BW pathogens, and CBW dual-use equipment. In addition, participant nations exchange information on programs of concern, and consider other measures to address CBW proliferation and use.

The Group was formed in 1984 in the wake of the extensive CW use during the Iran-Iraq War. Initially, the AG focused on imposing export controls on dual-use chemicals. Since

its inception, the list of 8 chemical precursors subject to control has expanded to 54. Many of the chemicals used in the production of chemical weapons also have legitimate applications, making control a complicated matter that must balance security concerns with peaceful commerce. In the late 1980s, the AG's list of controlled items was expanded beyond chemical precursors to include CW related equipment and technology. Beginning in 1990, members of the AG agreed to impose restrictions on certain biological toxins and pathogens, and the Group has also established export controls on specific microorganisms, toxins, and equipment with potential applications in a BW program.

The AG has periodically used warning mechanisms to educate chemical-related enterprises in their own countries to the risk posed by CBW proliferation. The Group has issued an informal "warning list" of dual-use precursors and bulk chemicals, and on CW-related equipment. Members develop and share the warning lists with their chemical industries and ask industry to report on any suspicious transactions. The AG has also used an approach to warn industry, the scientific community, and other relevant groups of the risk of inadvertently aiding BW proliferation.

### **The Missile Technology Control Regime**

The centerpiece of international efforts to prevent the proliferation of missiles is the Missile Technology Control Regime (MTCR). The Regime, which now has 29 members and a number of adherents, was announced by the G-7 countries on April 16, 1987. Originally, the MTCR sought to control the proliferation of missiles capable of carrying a nuclear warhead, systems capable of carrying a payload of 500 kilograms over a distance of 300 kilometers. The regime was modified in 1993, however, to control all unmanned delivery systems capable of carrying weapons of mass destruction.

The MTCR is a supplier control mechanism that prohibits the transfer by member states of key components and associated production materials, technology and equipment needed in the production of missiles, defined by the regime as ballistic missiles, space launch vehicles and sounding rockets. In addition, the regime defines unmanned aerial vehicles to include cruise missiles, drones, and remotely piloted vehicles.

Originally, the Regime required all new members to eliminate any missile or missile development programs that exceeded the limits of the regime. This restriction did not apply to the originating seven countries. More recently, however, countries with active space launch programs with potential military applications (i.e., Brazil) have been permitted to enter the regime in the hopes of controlling the possible transfer of missile-related equipment to other states. The Regime's terms state that it is not "designed to impede national space programs . . . as long as such programs could not contribute to delivery systems for weapons of mass destruction." The Regime's members are expected to take special precautions in such transfers, however, since the technology used in space launch vehicles (SLVs) is virtually identical to those used in ballistic missiles.

The regime has been successful in complicating the missile acquisition programs of several countries, and has even led to the termination of some missile development programs. Countries such as North Korea, Iran, Pakistan and India, however, have been able to develop increasingly capable missiles systems despite the existence of the regime.

### **Notes**

1. In this book, Israel, India, and Pakistan are described as de facto, non-NPT or "self-declared" nuclear-weapon states. In May 1998, India and Pakistan each conducted nuclear weapon tests and declared themselves "nuclear powers." As a result, this book refers to the original five, NPT-recognized, nuclear-weapon states as the de jure or "established" nuclear-weapon states. The NPT and the non-proliferation regime have no legal category and no provision for additional nuclear-weapon states. Until a better term emerges, non-NPT or "self-declared" nuclear-weapon states may be acceptable as descriptive terminology.
2. "Full-scope safeguards" were developed pursuant to the NPT and provide for IAEA inspections and monitoring of all nuclear materials, and the facilities that contain those materials, within the jurisdiction of the state in question. The goal of IAEA inspections and monitoring under the NPT is to verify that nuclear materials are not being diverted by the state in question to nuclear weapons or nuclear explosive purposes of any kind. A state may declare and exempt nuclear materials from IAEA inspection for narrow military purposes, such as fueling naval nuclear reactors. To date, no non-nuclear-weapon state parties to the NPT have built nuclear submarines and obtained this exemption for naval nuclear propulsion. Since the IAEA monitors only activities connected with the production or use of nuclear materials, it does not have under its original charter (or even under the NPT) a basis for searching for and investigating nuclear-weapons-related activities, such as fabricating or testing the non-nuclear components of nuclear weapons, unless nuclear materials are present in these activities.
3. The CTBT's entry-into-force provision requires the ratification of 44 nations that possess either nuclear power or research reactors--a group that includes both the 5 established nuclear-weapon states and the de facto nuclear-weapon states (India, Israel, and Pakistan). If the treaty still has not entered into force by September 1999, three years after it was opened for signature, the nations that have ratified it may convene a conference to discuss ways to accelerate entry into force. As of October 1997, 148 nations (including the 5 established nuclear-weapon states and Israel) had signed the treaty. However, India and Pakistan, whose ratification of the treaty was seen as essential, had not signed.