The Law of Arms Control: International Supervision and Enforcement

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6  General features of supervisory mechanisms in global arms control treaties featuring international organisations: OPCW, IAEA, CTBTO

i. Introduction

In the course of the last fifty years co-operation between States in the field of arms control has gradually reached a level of far-reaching organisation, culminating in the establishment of specialised international organisations as supervising bodies in arms control treaties. The establishment of any international organisation not only confirms a common goal of the international community, but also creates an organisational framework that grants the international community some ‘capacity to act’, a capacity at least in part independent of the States. Such organisation moreover offers the possibility to all member States to actually participate in the supervision of compliance, both during the phase of implementation of the treaty and thereafter, and enables the member States to mutually control armaments without this control being too easily manipulated by the inherent as well as the deliberate ambiguities of the treaty.

In this chapter, the focus will be on the global arms control treaties that establish or use a specialised international organisation as their supervising body. They appear in the field of nuclear weapons (IAEA/NPT safeguards system and CTBT) and chemical weapons (CWC).\(^{596}\) Whereas the CWC offers an example of a comprehensive regime aiming at a complete ban of chemical weapons, the NPT and the CTBT are both concerned with the prevention of the proliferation of nuclear weapons.

The inquiry started in chapters [4] and [5] will be continued here. Following the theory that has been elaborated in chapter [4], the institutional design

\(^{596}\) See the ‘Convention on the Prohibition of the Development, Production, Stockpiling and the Use of Chemical Weapons and on their Destruction’, text in 32 ILM 800, and see the ‘Comprehensive nuclear Test Ban Treaty’, text in 35 ILM 1439. On the NPT see supra, chapter [5].
and the methods of the supervisory mechanisms of the CWC, the IAEA-NPT system and the CTBT will be examined. The analysis of the institutional design of these treaties is *inter alia* meant to clarify what powers have been vested in the organs of the supervising organisations. The power to take binding decisions is obviously the most important in this respect. Even though, generally speaking, decision-making in international organisations is still dominated by the States, which through their representatives in the appropriate organs collectively decide on the most fundamental questions, the powers of especially the executive and the technical organs of IAEA, OPCW and CTBTO are considerable and their direct influence on the behaviour of the States Parties is significant.

I. The CWC and the OPCW

1. A brief note on history

1.1 The 1925 Geneva Protocol

On June 17, 1925, the ‘Protocol for the Prohibition of the Use in War of Asphyxiating, Poisonous or other Gases, and of Bacteriological Methods of Warfare’ was signed. It entered into force February 8, 1928. At that time, the question of the control of chemical weapons had already been high on the international agenda for quite some time. The purpose of the 1925 Geneva Protocol is that the prohibition reflected in its title shall be universally accepted as a part of international law, binding alike 'the conscience and practice of nations'. In the Protocol, the High Contracting Parties declare that they, insofar as they are not already Parties to treaties prohibiting such use, accept the prohibition of the use in war of asphyxiating, poisonous or other gases, and of all analogous liquids, materials and devices, agree to extend this prohibition to the use of bacteriological methods of warfare and agree to be bound as between themselves according to the terms of this declaration. Furthermore, the High Contracting Parties will exert every effort to induce other States to accede to the Protocol.

The 1925 Geneva Protocol is limited in scope because it is valid only with respect to the use of chemical weapons in times of war. It does not relate to the development, possession or transfer of chemical weapons in war, or to any behaviour whatsoever in times of peace. Moreover, many signatory and

597 Already at the end of the 19th century, efforts had been made to conclude treaties dealing with chemical warfare, but it is safe to assume that the horrors caused by the use of chemical weapons in WW I have been the most direct motive for the efforts to control chemical weapons. For a historical overview, see Robinson (1998), p. 17-36.
acceding States originally made substantive reservations to the Protocol.598 Most reservations bring with it that the State making the reservation will only observe the prohibition of use in war towards other States Parties to the Protocol as long as they observe this obligation towards it. This is another indication of the reciprocal nature of arms control law, which can also be found in arms control treaties of a later date.

All States Parties to the Protocol declare they agree to be bound by its provisions (in fact a statement that \textit{pacta servanda sunt}). Understandably, there are no provisions relating to any form of supervision of compliance with the prohibitions contained in the Protocol. For how could compliance with a prohibition of use of a certain weapon in wartime be monitored or verified in times of peace?599 Furthermore, the States at that point in time were not yet prepared to consider, let alone accept, international supervision of their behaviour with regard to their national armed force. The fact that they agreed to conclude a Protocol containing a legally binding prohibition was revolutionary enough in itself. Besides, it was felt that compliance would in part be induced by the awareness that a violation could bring retaliation in kind, particularly against inadequately protected civilian populations.600 The ban on the use of chemical and biological weapons of the Geneva Protocol, although of major importance, has not proven to be very effective in practice. Italy, for example, which ratified the Protocol in 1928 without reservations, did not hesitate to use chemical weapons on a large scale in Libya and Abessinia (Ethiopia) in the 1930s. Also Spain and France (the latter being the Protocol’s depositary State) in Morocco in the 1920s, Japan against China (1937-1945), Iraq (and possibly also Iran) in the Gulf War in the 1980s, are known to have made use of chemical weapons in

\footnotesize{598} First, many States declared it to be binding only as regards relations with other Parties. This means that the prohibition of the use of chemical weapons is not accepted in the event of war with a State not Party to the Protocol. Second, many States made a reservation in which they consider the Protocol to cease being binding on them in regard to any enemy States whose armed forces or allies do not observe the provisions of the Protocol. In other words, a ‘first violator’- State (and his allies) waives its right to protection against the use of chemical weapons under the Protocol. All States Parties to the protocol that made the first reservation also made the second one. A third kind of reservation consists of the statement that the Protocol will cease to be binding as regards the use of \textit{chemical} agents with respect to any enemy state whose armed forces or allies do not observe the provisions. This means that States Parties having made this kind of reservation will not make use of bacteriological weapons in any circumstances, even though in the circumstances described in the reservation use could be made of chemical weapons. Of course, this reservation only received a deeper meaning after 1975, when the BWC entered into force and as the States Parties to the BWC reinforced their commitment under the 1925 Geneva Protocol. Recently, several States have withdrawn their reservations to the Geneva Protocol. See Gioia (1998), p. 388.

\footnotesize{599} On the other hand, it might have been possible at that time to agree on the establishment of an \textit{ad hoc} verifying body as soon as war broke out and one or more of the belligerents was a State Party to the Protocol. Later, the UNS-G has assumed such a task. See \textit{supra}, chapter [4].

wartime.\textsuperscript{601} It is clear, that the norm \textit{pacta servanda sunt} has been insufficient to secure compliance with the agreed prohibition in the Geneva Protocol.

1.2 Decoupling chemical and biological weapons
The progress in the field of chemical arms control has long been blocked because it was always linked with biological weapons. It was only after the BWC was concluded in 1972 that serious negotiations on the conclusion of a separate convention on chemical weapons could start.\textsuperscript{602} It would still take over twenty years to reach agreement on a ban relating to chemical arms, but the agreement that has finally emerged, the CWC, is the most comprehensive single arms control treaty ever concluded. The CWC was signed in 1993 and entered into force after the deposit of the 65\textsuperscript{th} instrument of ratification, on 29 March, 1997. Following the concept of a general and complete prohibition, such as had been laid down earlier with regard to biological weapons, the aim has been the complete and effective prohibition of the development, production, and stockpiling of all chemical weapons and the assurance of their destruction, which, as the UNGA had already stated in 1978, ‘represented one of the most urgent measures of disarmament’.\textsuperscript{603} The CWC is not meant to replace the Geneva Protocol, as appears in particular from Art. XVI(3) CWC and also from the CWC preamble, which upholds the importance of the 1925 Geneva Protocol and expressly states that the CWC complements the obligations assumed under that Protocol.

2. Substantive law in the CWC

2.1 Objectives and purposes of the CWC: the CWC preamble
The preamble to the CWC places the Convention within the larger context of the process of international arms control, indicating both the importance (in retrospect) of earlier treaties and referring to the final objective of the process, in that the States Parties to the CWC are determined to act with a view to achieving progress towards general and complete disarmament under strict and effective control, including the prohibition and elimination of all types of weapons of mass destruction. The preamble to the CWC reaffirms the principles and objectives of, and obligations assumed under,


\textsuperscript{602} After the topic of chemical and biological weapons had been introduced in 1968 in the Eighteen Nation’ Committee on Disarmament (the CD’s predecessor of those days), the UK in 1969 proposed to deal with biological weapons ahead of chemical weapons, which was accepted by the superpowers (US and SU). See Robinson (1998), p. 23-33.

\textsuperscript{603} See SSOD-I (1978), par. 75.
the Geneva Protocol and also those of the BWC. In the preamble the objective of the CWC itself is described as ‘to exclude completely the possibility of the use of chemical weapons, through the implementation of the provisions of the CWC, thereby complementing the obligations assumed under the Geneva Protocol of 1925’. Clearly, the CWC effectively outpaces the Geneva Protocol, in that its complete and effective prohibitions of the development, production, acquisition, stockpiling, retention, transfer and use of chemical weapons and their destruction, are necessary to ensure the complete exclusion of the possibility of the use of chemical weapons. Comparable to nuclear arms control treaties, in which developments in the field of peaceful use of nuclear energy are exempted from the prohibitions and even promoted, the CWC makes explicit that its purpose is not to endanger the development of ‘peaceful uses’ of chemicals. The States Parties desire to promote the free trade in chemicals and the international co-operation and exchange of scientific and technical information in the field of chemical activities for purposes not prohibited under the CWC in order to enhance the economic and technological development of all States Parties. Provisions on economic and technological development reflect this desire as well. The prohibition of the use for war-like purposes of chemicals the possession of which is in itself permitted clearly comes to the fore in the prohibition to use herbicides as a method of warfare, which is explicitly mentioned in the preamble to the CWC.

2.2 Article I - general obligations
Each State Party to the CWC first of all undertakes never under any circumstances to develop, produce, otherwise acquire, stockpile or retain chemical weapons, or transfer, directly or indirectly, chemical weapons to anyone (Art. I(1(a)). This ‘negative’ obligation remains in force under ‘any circumstances’, hence in times of peace as well as in times of war. The States Parties undertake further never under any circumstances to use chemical weapons and to engage in any military preparations to use chemical weapons (Art. I(1(b, c)). Although non-possesssion of chemical weapons implies the impossibility of use, this prohibition makes clear that the existing stockpiles (which have to be destroyed in due time) may never

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604 *Vice versa*, in Art. IX of the BWC, the States Parties had already affirmed the recognised objective of effective prohibition of chemical weapons. The States Parties to the CWC recall (‘bearing in mind’) this objective in the preamble.
605 This also becomes apparent from the fact that the CSP of the OPCW shall foster international co-operation for peaceful purposes in their field. The use of chemicals for peaceful purposes is one of the ‘Purposes Not Prohibited’ under the CWC (see Art. II(9)(a)).
606 See Art. XI of the CWC. This article mainly provides for the rights of all States Parties to co-operate internationally in conducting research and other peaceful activities with regard to chemicals. The States Parties also undertake to review their national regulations in the field of the trade of chemicals in order to render them consistent with the object and purpose of the CWC (XI(1(e))).
under any circumstance be used, in times of war or in retaliation. Finally, the Parties undertake never under any circumstances to assist, encourage or induce, in any way, anyone to engage in any activity prohibited to a State Party under the CWC (Art. I(1)(d)). This formula forbids any State Party to support or assist governments of other States in acquiring, using or preparing for use of chemical weapons and outlaws any engagement in chemical terrorism in any other State. A second ‘negative obligation’ can be found in par. 5 of Art. I: each State Party undertakes not to use riot control agents as a method of warfare. The possession of this kind of chemicals is allowed; only their use as a weapon is prohibited.

The other ‘general obligations’ of Art. I of the CWC are ‘positive’ obligations of result, requiring the States Parties to undertake action to fulfil them. There are (three) obligations to destroy, which relate to chemical weapons and to Chemical Weapons Production Facilities (CWPFs). Each State Party undertakes to destroy the chemical weapons as well as the CWPFs it owns or possesses, or that are located in any place under its jurisdiction or control, in accordance with the provisions of the CWC (Art. I(2, 4)). Furthermore, each State Party undertakes to destroy all chemical weapons it abandoned on the territory of another State Party. These chemical weapons are outside the jurisdiction or control of the State Party concerned, but a State Party is still responsible for their destruction if it has abandoned them on the territory of another State Party. For States in whose territory chemical weapons are located, it is imperative to become a Party to the CWC if they want these weapons to be destroyed (and paid for their destruction) by the State Party that abandoned them on their territory. The obligations to destroy must be performed in accordance with the provisions of the Convention. As we will see, these provisions are very elaborate and require a high level of international co-operation and organisation.

2.3 The problem of dual use of chemicals
One of the reasons for the comprehensiveness of the supervisory mechanism of the CWC is that the same chemicals may be used for peaceful purposes and for military purposes (as a weapon); it is the kind of use that determines whether States are dealing with forbidden weapons or peaceful applications explicitly allowed for. In line with this, ‘chemical weapons’ has been defined in the CWC as ‘toxic chemicals and their precursors, except where intended for purposes not prohibited under the Convention, as long as the types and quantities are consistent with such purposes’. As such, the

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607 See Bothe (1998), p. 3; Robinson (1998), p. 29; Gioia (1998), who observes (at p. 394) that the obligation not to engage in any military preparations to use chemical weapons, which has been adopted because otherwise a Party to the Convention could, after withdrawing from it, rapidly acquire a full chemical weapons capability if preparations had been undertaken, will certainly also apply in time of armed conflict.

608 Art. II(1). ‘Chemical weapons’ also means, together with its meaning under (a) or
definition excludes the legitimising effect of the unobjectionable purpose where there are serious reasons to believe that the declared purpose is not the real one because the quantities possessed are too high to be explained by the declared purpose.\textsuperscript{609} The problem of dual-use capabilities of chemicals is tackled by the regulations on ‘Activities Not Prohibited under this Convention’ (Art. VI). Examples of purposes not prohibited under the CWC include industrial, agricultural, research, medical and other peaceful purposes, as well as protective purposes (i.e. protection against toxic chemicals and protection against chemical weapons) and even military purposes not connected with the use of chemical weapons and not dependent on the use of the toxic properties of chemicals as a method of warfare (Art. II(9)). After going through all the trouble of controlling and destroying chemical weapons, it is obvious that each State Party must ensure that toxic chemicals and their precursors are only developed, produced, otherwise acquired, retained, transferred, or used within its territory or in any other place under its jurisdiction or control for purposes not prohibited under the CWC (Cf. Art. VI(2)). However, because of the fact that the use of chemicals for certain purposes is perfectly legitimate under the CWC, transparency and openness for purposes of the Convention cannot be required to be complete and perfect. A separate Annex on the Protection of Confidential Information (‘Confidentiality Annex’) has been added to the Convention, with a special Commission, the ‘Commission for the settlement of disputes related to confidentiality’ set up as the guardian of the confidentiality regime.\textsuperscript{610} Art. VI(10) in this respect provides that the Technical Secretariat (TS) of the OPCW, in conducting verification activities, shall avoid undue intrusion into the State Party’s chemical activities for purposes not prohibited under the CWC, and, in particular, shall abide by the provisions set forth in the Confidentiality Annex. It is an attempt to strike a delicate balance between achieving the openness required for effective verification on the one hand and taking into account the legitimate concerns about confidential (business) information of States Parties on the other hand.

The search for this delicate balance also accounts for the ambiguities present in certain provisions of the Confidentiality Annex. For example, it is stated

\textsuperscript{609} See Bothe (1998), p. 3.

\textsuperscript{610} This ‘Confidentiality Commission’ is a subsidiary organ of the CSP of the OPCW. See the Confidentiality Annex, (D), par. 23.
that ‘States Parties may take such measures as they deem necessary to protect confidentiality, provided that they fulfil their obligations to demonstrate compliance in accordance with the relevant articles and the Verification Annex’ (Conf. Annex C(13)), and ‘inspection teams shall be guided by the principle of conducting on-site inspections in the least intrusive manner possible consistent with the effective and timely accomplishment of their mission’ (Conf. Annex C(14)). In the end, the system’s weighing of interests in openness or confidentiality seems to be in favour of the inspected State Party, since the inspections teams have the unconditional duty to fully respect the procedures designed to protect sensitive installations and to prevent the disclosure of confidential data (Conf. Annex C(15)). Moreover, it can be noted that the inspection report, which shall contain the facts relevant to compliance with the CWC, shall be handled in accordance with the regulations established by the OPCW governing the handling of confidential information (Conf. Annex C(17)). This provision suggests that the inspected State Party shall be able, at least in theory, to prevent disclosure of any information in the inspection report that is designated by it as confidential (Cf. Conf. Annex A(2(a)). In this respect the final part of Conf. Annex C, par. 17, providing that if necessary, the information contained in the report shall be processed into less sensitive forms before it is transmitted outside the TS and the inspected State Party, seems a compromise so as to secure that at least part of the information in the inspection-report will be released outside the technical organ of the OPCW.\footnote{Note in this respect also Conf. Annex A(c(iii)): ‘Information classified as confidential shall be released by the [OPCW] only through procedures which ensure that the release of information only occurs in strict conformity with the needs of this Convention.’}

2.4 Schedule 1, 2, 3 chemicals and facilities

As mentioned, also after the full implementation of the CWC, State-Parties remain at liberty to produce and use chemicals with potential military applications for ‘purposes not prohibited under the Convention’. In connection with this, a division has been made between so-called Schedule-1, 2, and 3 chemicals and facilities related to such chemicals for supervisory purposes.\footnote{The parts of the Verification Annex which are devoted to the ‘Activities not prohibited under the Convention’ establish separate regimes for Schedule-1 chemicals and facilities related to such chemicals (Part VI); for Schedule-2 chemicals and facilities related to such chemicals (Part VII); for Schedule-3 chemicals and facilities related to such chemicals (Part VIII) as well as for other chemical production facilities (Part IX).} Two main factors determine the listing of particular chemicals in particular schedules, viz. the risk posed by the chemical to the object and purpose of the CWC and the commercial importance of the chemical. The ‘Annex on Chemicals’ of the CWC makes clear what toxic chemicals and what precursors are classified as Schedule-1, 2 and 3 chemicals, the
Schedule-1 being the most toxic and most dangerous having little legitimate peaceful or civilian purposes, Schedule-2 chemicals being used for civilian purposes in considerable but still small quantities, and Schedule-3 chemicals being used in large quantities for peaceful purposes. ‘Toxic chemicals’ are all chemicals which through their chemical action on life processes can cause death, temporary incapacitation or permanent harm to humans or animals. Regardless of the origin, method of production and place of production (facilities, munitions or elsewhere), all such chemicals are ‘toxic chemicals’.

The Schedules contained in the Annex on Chemicals list the toxic chemicals and their precursors (i.e. any chemical reactant which takes part at any stage in the production of whatever toxic chemical) that have been identified for the application of supervisory measures. The primary importance that is attached to the control and destruction of the Schedule-1 chemicals can be illustrated by the specific supervisory arrangements made for Schedule-1 chemicals and facilities related to such chemicals. For example, the Declarations that have to be made by the States Parties regarding their Schedule-1 chemicals are more detailed and stringent than others, and with regard to the use of Schedule-1 chemicals for purposes not prohibited under the CWC, Part VI of the Verification Annex establishes a strict regime (involving continuous monitoring activities) somewhat comparable to the safeguards system of the IAEA under the NPT. Also, the ‘order of destruction’ of chemical weapons based on Schedule-1 chemicals and of Schedule-1 chemicals producing CWP F has been arranged in a very stringent and elaborate manner (e.g. there are four separate ‘phases’ of destruction).

3. The supervisory mechanism of the CWC: the supervising body

3.1 The OPCW

As the Convention’s supervising body, the States Parties to the CWC establish the Organisation for the Prohibition of Chemical Weapons (OPCW), also referred to as ‘the Organisation’ (see Art. II(11)), located at The Hague (see Art. VIII(3), (14)). Through the OPCW the States Parties

613 Art. II(2)). Temporary incapacitation caused by riot control agents is allowed under the Convention as long as they are not used as a method of warfare. ‘Riot control agent’ means any chemical not listed in a Schedule, which can produce rapidly in humans sensory irritation or disabling physical effects which disappear within a short time following termination of exposure (Art. II(7)).

614 Also the procedure for the conversion of a former CWP F to purposes not prohibited under the Convention is stringently safeguarded, especially with regard to Schedule-1 and Schedule-2 chemicals (See Ver. Annex, Part V(D), par. 70, 71 and 85). See for a schematic overview Robinson (1995), p. 506.
seek to achieve the object and purpose of the Convention, ensure the implementation of its provisions, including those for international verification of compliance with it, and to provide a forum for consultation and co-operation among States Parties (Art. VIII(1)). From this, it is clear that the implementation of the supervisory mechanism of the Convention is part of the obligations that the States Parties undertake to achieve.

All States Parties to the Convention automatically become members of the Organisation; a State Party shall not be deprived of its membership in the Organisation (Art. VIII(2)). Expulsion of members apparently cannot be applied as an internal sanction. The budget of the Organisation shall comprise two separate chapters, one relating to administrative and other costs, and one relating to verification costs, thus emphasising the importance separately attached to the verification regime of the CWC. The Organisation shall conduct its verification activities provided for under the Convention in the least intrusive manner possible consistent with the timely and efficient accomplishment of their objectives. Only the information and data necessary to fulfil its responsibilities can be requested. The OPCW shall protect the confidentiality of information on civil and military activities and facilities coming to its knowledge in the implementation of this Convention and, in particular, shall abide by the provisions set forth in the Confidentiality Annex (Art. VIII(5)). These provisions again reflect that a balance must be struck between the powers of the Organisation to conduct its supervisory functions effectively and the sovereign rights of the States Parties to protect confidential information. In undertaking its verification activities the Organisation shall consider measures to make use of advances in science and technology (Art. VIII(6)). Hence, there is an *a priori* legal basis which enables the Organisation to anticipate on possible future verification-evading techniques. Furthermore, it is provided that a Scientific Advisory Board (SAB) be established to enable the Head of the TS to render specialised advice to the organs of the OPCW or to States Parties, in areas of science and technology relevant to the CWC. The SAB shall be composed of independent experts appointed in accordance with terms of reference adopted by the CSP of the OPCW (VIII(19(h))).

The OPCW and its staff shall enjoy on the territory and in any other place under the jurisdiction or control of a State Party such legal capacity and such privileges and immunities as are necessary for the exercise of its functions (VIII(48, 49)). These provisions emphasise the independence of the OPCW and may provide some guarantee for the ‘objective’ exercise of its functions. As organs of the Organisation there are established the Conference of the States Parties (CSP), the Executive Council (EC) and the Technical Secretariat (TS), see Art. VIII(4).
3.1.1 The Conference of the States Parties (CSP)

Composition, procedures, decision-making
The CSP shall be composed of all members of the OPCW. Each member shall have one representative in the Conference, who may be accompanied by alternates and advisers. The CSP is composed of State-representatives not independent experts. The CSP shall meet in regular sessions which shall be held annually unless the CSP itself decides otherwise. The CSP may also be convened in special session in certain particular circumstances and in the form of a Review Conference or an Amendment Conference (Art. VIII(13), (22)).

Each member of the OPCW shall have one vote in the CSP; a majority of the members shall constitute a quorum for the Conference (Art. VIII(16) and (17)). It is clear that the CWC is meant to be a non-discriminatory Convention, which does not confer special voting-rights upon certain members. The CSP shall take decisions on questions of procedure by a simple majority of the members present and voting. ‘Present and voting’ means that States Parties that temporarily have been deprived of their right to vote due to indebtedness of their financial contribution (Art. VIII(8)) will not be counted in to establish the quorum. Decisions on matters of substance should be taken as far as possible by consensus. Note, that instead of ‘shall’, which is used by the CWC in almost all other articles, here the ("weaker") word ‘should’ is used. If consensus is not attainable when the issue comes up for decision, the chairman of the CSP shall defer any vote for 24 hours and during this period shall make every effort to facilitate achievement of consensus. The chairman shall report to the Conference before the end of this period; if consensus has not been attained, the Conference shall take the decision by a two-thirds majority of members present and voting unless specified otherwise in the CWC (Art. VIII(18)). There is no decision blocking capacity by means of a veto or otherwise. The fact that a decision eventually can be taken by a two-third majority overruling the one-third minority, could induce States Parties to make every effort to reach consensus. This same provision could on the other hand bring along that States Parties avoid pronouncing on sensitive matters in certain

615 Art. VIII (12) provides that special sessions shall be convened when decided by the CSP; when requested by the EC (see VIII (33)); when requested by any member and supported by one-third of the members; or in accordance with paragraph 22 to undertake reviews of the operation of the CWC. With regard to amendment conferences, Art. XV(2) provides that a proposed amendment to the CWC shall be considered only by an Amendment Conference. An Amendment Conference shall be convened if one third or more of the States Parties notify the D-G (the Head of the TS) not later than 30 days after its circulation that they support further consideration of the proposal.

616 The question whether a question is a matter of substance, shall for decision making purposes be treated as a matter of substance (Art. VIII(18)).
circumstances and rather conceal their real intentions by general and vague wordings that will easily pass the consensus test.

**Powers and functions**

The CSP shall be the principal organ of the Organisation. It shall consider any questions, matters or issues within the scope of the CWC, including those relating to the powers and functions of the EC and the TS. It may make (non-binding) recommendations and take (binding) decisions on any questions, matters or issues related to the CWC raised by a State Party or brought to its attention by the EC. The CSP shall oversee the implementation of the CWC, and act in order to promote its object and purpose. The CSP shall review compliance with the CWC (VIII(20)) and shall take the necessary measures to ensure compliance with the Convention (VIII(21(k) and Art. XII)). It shall establish such subsidiary organs as it finds necessary for the exercise of its functions in accordance with the CWC (VIII(20(f))). The CSP shall also oversee the activities of the EC and the TS and may issue guidelines in accordance with the CWC to either of them in the exercise of their functions. This very broad indication of the powers and functions of the CSP renders it almost impossible to argue that a certain situation pertaining to the CWC would fall outside its competence. The use of the word 'guidelines' implies that the CSP decides what general direction the EC and the TS should follow, but also makes clear that the CSP does not prescribe actions to be taken by these organs in the exercise of their functions in a concrete situation. The CSP has the power to elect the members of the EC and approves their rules of procedure and also appoints the D-G, the Head of the TS (upon the recommendation of the EC; see Art. VIII((21)(c-e), 43). The CSP has been equipped with various autonomous powers, albeit that the CSP for the making of recommendations and the taking of decisions may rely on the initiative of the EC (See Art. VIII(19)).

### 3.1.2 The Executive Council (EC)

**Composition, procedures, decision-making**

The EC is the executive organ of the OPCW (VIII(30)), with limited membership: it shall consist of 41 members, to be elected by the CSP for two years and composed of States Parties from Africa (nine), Asia (nine), Eastern Europe (five), Latin America and the Caribbean (seven) and Western Europe (ten) in an equitable geographical distribution, due regard also being paid to the importance of chemical industry, as well as to political and security interests (VIII(23)).

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617 One further State Party (number forty-one) is to be elected consecutively from the regions of Asia and Latin America and the Caribbean, as a rotating member. The States Parties located in the regions mentioned (Africa, Asia, etc.) shall themselves designate the members that will serve on the EC. A specified number of members per region shall consist of the
together with their alternates and advisers shall enjoy such privileges and immunities as are necessary in the independent exercise of their functions in connection with the OPCW (VIII(49)). Art. VIII(29) arranges voting and decision-making. Each member of the EC shall have one vote. Questions of procedure shall be decided by a simple majority of the members of the EC. Unless specified otherwise in the Convention, the EC shall take decisions on questions of substance with a two-third majority of all its members.\textsuperscript{618} Even though the EC in practice will probably try to reach consensus, on the basis of the provisions of the Convention it is not required to do so. It is stated as such that a two-third majority will decide, thus preventing any State Party (or, at least in theory, even a group of States Parties) from blocking decision-making by the EC. The EC shall meet for regular sessions, but may also meet in between those sessions as often as may be required for the fulfilment of its powers and functions (VIII(28)).

\textbf{Powers and functions}
The EC, as the executive organ of the OPCW, shall be responsible to the CSP. In carrying out its powers and functions entrusted to it under the CWC, as well as those functions delegated to it by the CSP, the EC shall act in conformity with the recommendations, decisions and guidelines of the CSP and assure their proper and continuous implementation (VIII(30)). From this and other provisions, it is apparent that the EC is subordinate to the CSP; it has to carry out and assure the implementation of recommendations of the CSP, which logically are non-binding acts.\textsuperscript{619}

The EC shall promote the effective implementation of, and compliance with, the CWC. Importantly, it has the power to decide on many matters pertaining to questions of compliance. The EC shall facilitate consultations and co-operation among the States Parties at their request (VIII(31)); approve agreements and arrangements relating to the implementation of verification activities, negotiated by the TS with States Parties (VIII(34)(c)); the EC shall consider any issue or matter within its competence affecting the CWC and its implementation, including concerns regarding compliance, and cases of non-compliance, and, as appropriate, inform States Parties and bring the issue or matter to the attention of the CSP (VIII(35)); the EC may

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\textsuperscript{618} When the issue arises as to whether the question is one of substance or not, that question shall be treated as a matter of substance unless otherwise decided by the EC by the majority required for decisions on matters of substance (VIII(29). An example of a decision that may be taken by simple majority by the EC on what is no doubt a question of substance can be found in Art. X(10).

\textsuperscript{619} See in this regard also Art. VIII(32(b)), which provides that the EC shall submit to the CSP, \textit{inter alia}, 'the report on the performance of its own activities and such special reports (...) which the CSP may request'. Furthermore, the agreements or arrangements that the EC may conclude on behalf of the OPCW are subject to prior approval of the CSP (VIII(34(a)).

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States Parties with the most significant national chemical industry in the region as determined by internationally reported and published data.

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consult with States Parties that have caused doubts or concerns regarding compliance, and may even request States Parties concerned to take measures to redress the situation; the EC may finally take measures to the extent that it considers further action to be necessary (VIII(36)). In addition to the general powers mentioned, the EC has many specific powers in all stages of the process of verification (see infra). The EC can be considered the central organ in the process of CWC supervision.

3.1.3 The Technical Secretariat (TS)

Composition and procedures
The TS shall comprise inspectors, a Director-General (D-G), who shall be its head and chief administrative officer, and such scientific, technical and other personnel as may be required (VIII(41)). The Inspectorate shall be a unit of the TS and shall act under the supervision of the D-G (VIII(42)). The D-G shall be responsible to both the CSP and the EC for the appointment of the staff, the recruitment of which shall be guided by the principle of efficiency and the functioning of the TS (VIII(44)). The D-G and the staff of the TS shall enjoy such privileges and immunities as are necessary in the independent exercise of their functions in connection with the OPCW (VIII(49)); however during the conduct of verification activities, their privileges and immunities shall be those set forth in Part II(B) of the Verification Annex (VIII(51)). Although only citizens of States Parties to the CWC can serve as inspectors (VIII(44)), the Convention makes absolutely clear that the TS comprises an international staff: in the performance of their duties, the D-G, the inspectors and the other members of the staff shall not seek or receive instructions from any Government or from any other source external to the OPCW. They shall refrain from any action that might reflect on their positions as international officers responsible only to the CSP and the EC (Art. VIII(46)). Once again it is emphasised that the Inspectorate under the procedures of the CWC is truly 'international' and that inspection by the OPCW is out of the hands of the individual States Parties.

620 The EC also has important ‘internal’ supervisory functions. It shall e.g. supervise the activities of the TS and co-operate with the National Authority of each State Party (VIII(31)).
621 Art. VIII(44): "(…) recruitment shall be guided by the principle that the staff shall be kept to the minimum necessary for the proper discharge of the responsibilities of the Technical Secretariat."
622 This is further strengthened by the provision that each State Party shall respect the exclusively international character of the responsibilities of the D-G, the inspectors and the other members of the staff, and shall not seek to influence them in the discharge of their responsibilities (VIII(47)). But note, that States Parties are not precluded from arranging by mutual consent for inspections among themselves to clarify and resolve matters; see Art. IX(2).
Powers and functions
The TS essentially has a supportive role: it shall assist the CSP and the EC in the performance of their functions. This does not mean the TS would have no autonomous powers. On the contrary: the TS shall carry out the verification measures provided for in the CWC, perform other functions entrusted to it under the CWC as well as those functions delegated to it by the CSP and the EC (VIII(37)); provide administrative and technical support to the CSP, the EC, subsidiary organs and States Parties in their implementation of the Convention (VIII(38(c, e))); address and receive communications on behalf of the OPCW to and from States on matters pertaining to the implementation of the CWC (VIII(38(d))); inform the EC of any problem that has arisen with regard to the discharge of its functions (VIII(40)). The TS also has a role in the co-ordination, organisation and administering of different institutions. The D-G is the central ‘liaison-officer’ in the contacts between the OPCW and individual States Parties. He also has the primary responsibility for ensuring the protection of confidential information under the CWC (see Conf. Annex, par. (A)(2)).

4. The supervisory mechanism of the CWC: methods of supervision

4.1 Monitoring provisions in the CWC

General remarks
No other arms control agreement demonstrates the connection between provisions on monitoring and the process of verification better than does the CWC. All verification activities are linked to the information on possession and (plans for) destruction of chemical weapons that must be provided in Declarations by the States Parties. The Declarations are the core of the monitoring phase of the CWC and cover not only information on possession, transfers and plans for destruction of chemical weapons, but also annual records of the destruction (or temporary conversion) of equipment and buildings housing equipment used or usable for the production of chemical weapons, and annual statements regarding the regime for purposes not prohibited under the Convention. What should be the contents of these Declarations is prescribed in a detailed and precise manner, and only in rare instances incomplete Declarations are accepted, with the additional requirement that the reasons for their incompleteness be stated.

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623 The TS shall co-ordinate the establishment and maintenance of permanent stockpiles of emergency and humanitarian assistance by States Parties, and may inspect the items maintained for serviceability (VIII(39(b)); the TS shall administer the Voluntary Fund referred to in Art. X of the CWC (VIII(3(c))); the D-G of the TS shall be responsible for the organisation and functioning of the Scientific Advisory Board (SAB) (VIII(45)).

624 See, e.g., Arts. III(1(a(iii)) and III(1(a(iv)) and Part IV(A(36)) of the Verification Annex.
Furthermore, the accuracy of Declarations is systematically verified and their contents are confirmed by the TS. It should be realised, however, that the Declarations themselves are entirely dependent on national monitoring and data collection, and hence if States Parties feed inaccurate data into the system then inaccurate information is what probably will come out.\textsuperscript{625}

In addition to the Declarations on possession and destruction plans, Technical Means for the purpose of continuous monitoring are available under the Convention. Finally, a general exchange of information (reports, declarations, etc.) is provided for, which allows for all States Parties to make use of the information provided by other States Parties (except for possible confidential parts of it); this enables them to formulate their own thoughts about the level of compliance of other States Parties. In addition, it should be noted that the conclusion of bilateral agreements on the exchange of information is allowed in addition to the institutionalised process of information exchange through the OPCW.

\textit{4.1.1 Declarations on ownership or possession (Art. III)}

The process of supervision of the CWC starts on the basis of Declarations that have to be submitted by the States Parties. Art. III of the CWC prescribes that Each State Party submits to the Organisation, not later than 30 days after the CWC enters into force for it, specified declarations with respect to: (a) chemical weapons; (b) old chemical weapons and abandoned chemical weapons; (c) chemical weapons production facilities; (d) other facilities; and (e) riot control agents.

The precise information that shall be specified in the Declarations has been laid down in Art. III and Part IV and V of the Verification Annex to the CWC. Any chemical weapons discovered by a State Party after the initial declaration of chemical weapons shall be reported, secured and destroyed (Art. IV(9)). Declarations also have to be submitted by the States Parties with regard to ‘Activities not prohibited under the Convention’, in accordance with Art. VI and the relevant parts of the Verification Annex. Those Declarations form the starting-point to secure that the provisions on use of toxic chemicals and their precursors for purposes not prohibited under the CWC (See the definition in Art. II(9)) will not be frustrated or abused.

\textit{a. Declarations with respect to chemical weapons}

In these declarations, each State Party shall indicate whether it owns or possesses any chemical weapons, or whether there are any chemical weapons located in any place under its jurisdiction or control; specify the precise location, aggregate quantity and detailed inventory of chemical weapons it owns or possesses, or that are located in any place under its jurisdiction or control.

jurisdiction or control (III(1(a)(i, ii)). Next to these Declarations on the presence of chemical weapons on the territory of the State Party or place under its jurisdiction or control, each State Party has to declare whether it has transferred or received, directly or indirectly, any chemical weapons since January 1946 and specify the transfer or receipt of such weapons (III(1(a(iv)). Finally, each State Party has to provide its general plan for destruction of chemical weapons that it owns or possesses, or that are located in any place under its jurisdiction or control (III(1(a(v)).

b. Declarations with respect to old and abandoned chemical weapons
States also have to make declarations with respect to old chemical weapons and abandoned chemical weapons (and provide all available information in accordance with Part IV(B)(3, 8, 10) of the Verification Annex). Art. II(5) defines old chemical weapons as (a) chemical weapons which were produced before 1925, or (b) chemical weapons produced in the period between 1925 and 1946 that have deteriorated to such extent that they can no longer be used as chemical weapons. It is clear that under the Convention, ‘old chemical weapons’ were once weapons, but can no longer be considered useful as such. ‘Abandoned chemical weapons’ means chemical weapons, including old chemical weapons, that have been abandoned by a State after 1 January 1925 on the territory of another State without the consent of the latter (Art. II(6)).

c. Declarations with respect to CWPF
States must also submit declarations with respect to CWPF. Art. II(8) of the CWC defines extensively what is meant by such facilities. Simply put, all (buildings housing) equipment of which the chemicals producing processes contain chemicals that can be used for weapons purposes and not for purposes not prohibited under the Convention above one tonne per year, are CWPF.

Each State has to declare whether it has or has had any CWPF under its ownership or possession, or that is or has been located in any place under its jurisdiction or control at any time since 1 January 1946 and has to specify this or these facilities. Furthermore, it has to report any CWPF on its territory that another State owns or possesses or has owned or possessed or that is or has been located in any place on its territory under the jurisdiction or control of another State at any time since 1 January 1946. Each State also has to declare whether it has transferred or received, directly or indirectly, any equipment for the production of chemical weapons since 1 January 1946 and specify the transfer or receipt of such equipment. Each State has to provide as well its general plan for destruction of any CWPF it owns or possesses, or that is located in any place under its jurisdiction or control, and specify actions to be taken for closure of any CWPF. Finally, each State Party has to provide its general plan for any temporary conversion of any
CWPF into a chemical weapons destruction facility. The question whether or not a certain facility can be qualified as a CWPF is relevant, given that these facilities have to be destroyed in accordance with specific provisions of the Verification Annex of the CWC and also given that the type of declarations that have to be made with regard to the CWPF differ from the declarations that have to be made with respect to other facilities.

d. Declarations with respect to other facilities
With respect to other facilities, e.g. the facilities having a production capacity for synthesis of chemicals that is less than one tonne (see Art. II(8)(b)(I)), the State has to specify the precise location, nature and general scope of activities of any such facility or establishment under its ownership or possession, or located in any place under its jurisdiction or control. Facilities that are not designed, constructed or used to produce chemicals listed in Schedule-1 or more than one tonne per year of other chemicals that are useless for purposes not prohibited under the Convention, but that could be used for chemical weapons purposes, as well as facilities that are not designed, constructed or used for filling chemical weapons into munitions and devices, are not CWPF and are therefore subject to the ‘declarations with respect to other facilities’.

e. Declarations with respect to riot control agents
With respect to riot control agents, any state has to specify (and update within 30 days after any change becomes effective) the chemical name, structural formula and Chemical Abstracts Service (CAS) registry number, if assigned, of each chemical it holds for riot control purposes.

4.1.2 Plans, Declarations and information relating to destruction
The positive ‘obligation to destroy’ that the States Parties to the CWC undertake is also connected to the provision of information by the States Parties to the TS of the OPCW. This information is provided by way of Annual Plans, Declarations, or in other forms.

Annual Plans and Declarations concerning destruction of chemical weapons
Pursuant to Art. IV(7) each State Party shall submit detailed plans to the TS for the destruction of chemical weapons it owns or possesses, or that are located in any place under its jurisdiction or control (except old and abandoned chemical weapons), not later than 60 days before each annual destruction period begins; the detailed plans shall encompass all stocks to be destroyed during the next annual destruction period. The State Party shall furthermore submit declarations annually regarding the implementation of its plan for destruction of these chemical weapons, not later than 60 days after the end of the annual destruction period. Finally, the State Party shall
certify, not later than 30 days after the destruction process has been completed, that all of these chemical weapons have been destroyed.

**Information on chemical weapons destruction facilities**

A State Party shall provide for each of its chemical weapons destruction facilities (i.e. the facilities where the destruction of the chemical weapons will take place), detailed facility information to assist the TS in developing preliminary inspection procedures for use at the facility (par. 30 of Part IV(A) of the Verification Annex). After a review of the detailed facility information, the TS, if the need arises, shall enter into consultations with the State Party in order to ensure *inter alia* that the facility operation allows appropriate verification (par. 35 of Part IV(A)).

**Plans and Declarations concerning destruction of CWPF**

Each State Party shall annually submit declarations regarding the implementation of its plans for the destruction of all CWPF it owns or possesses, or that are located in any place under its jurisdiction or control, not later than 90 days after each annual destruction period (Art. V(9(b))).

### 4.1.3 Declarations with respect to chemicals and facilities used for activities not prohibited under the Convention (Art. VI)

Art. VI of the CWC relates to activities not prohibited under the CWC. The production of chemicals, even Schedule-1 chemicals, for purposes not prohibited under the Convention is allowed under stringent conditions. With regard to supervision over the ‘activities not prohibited under the Convention’, Art. VI(7, 8) provides for methods of monitoring. Each State Party is required to make an initial Declaration on relevant chemicals and facilities in accordance with the Verification Annex, and subsequently to make annual Declarations regarding the same chemicals and facilities. The Annex specifies what Declarations must be made with regard to chemicals and facilities listed under Schedule-1 (Part VI of the Annex), 2 (Part VII of the Annex), 3 (Part VIII of the Annex) and ‘other chemical production facilities’ (Part IX of the Annex). The pattern of all these ‘obligations to declare’ is similar. Initial and annual Declarations shall include aggregate national data for the previous year on the quantities produced, processed, consumed, imported and exported of each Schedule-2 and 3 chemical, as well as a quantitative specification of import and export for each country involved.\(^{626}\) Furthermore, initial and annual Declarations are required for all plant sites that comprise one or more plant(s) that produced, processed or consumed during any of the previous three calendar years or is anticipated to produce, process or consume in the next year more than a specified amount of Schedule-2 or 3 chemical(s) and ‘unscheduled discrete organic

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\(^{626}\) See Part VII(A(1)) for Schedule-2 chemicals; Part VIII(A(1)) for Schedule-3 chemicals.
chemicals' that are produced in other chemical production facilities. A list of specified information on plant sites shall be transmitted by the TS to States Parties upon request (See Part VII(A(11)); Part VIII(A(11)); Part IX(A(8)).

The Declarations to be made pursuant to the regime for Schedule-1 chemicals and facilities is distinct from the others. In Part VI of the Verification Annex, a strict regulation has been laid down regarding facilities producing Schedule-1 chemicals: in principle, they have to be produced in a 'Single Small-Scale Facility' (SSSF) whereas 'other facilities' for the production of these chemicals may serve to produce chemicals only in clearly specified quantities (See Part VI(C)(8-12)). Each State Party that operates a SSSF shall make an initial and detailed annual declaration regarding the activities of the facility for both the previous year and regarding the projected activities and the anticipated production at the facility for the coming year (Part VI(D(13, 15, 16)). Initial and detailed annual declarations are to be made with regard to the 'other facilities' that produce certain quantities of Schedule-1 chemicals as well (Part VI(D(17, 19, 20)).

4.1.4 Exchange of information: information to and from the TS
Since the supervisory mechanism of the CWC relies to a large extent on the Declarations, plans and annual reports of the States Parties, it is of utmost importance that all States Parties to the CWC, as well as the organs of the OPCW, are informed on a regular, or even permanent, basis of any relevant changes and events. Therefore, the CWC foresees in the general exchange of information, through the (D-G of the) TS, to and from the organs of the OPCW and the States Parties.

Exchange of information between the TS and other organs of the OPCW
Art. VIII(40) provides that the TS shall inform the EC of any problem that has arisen with regard to the discharge of its functions, including doubts, ambiguities or uncertainties about compliance with the CWC that have come to its notice in the performance of its verification activities and that it has been unable to resolve or clarify through its consultations with the State Party concerned. The importance of this provision can be illustrated by pointing at the general rules for the conduct of on-site inspections. The Verification Annex, Part II(51) establishes a right for inspectors to request clarifications in connection with ambiguities that arise during an inspection. If the ambiguity cannot be removed during the inspection, the inspectors shall notify the TS immediately. This provision coupled with Art. VIII(40)

627 See Part VII(A(3, 4, 9)) for Schedule-2 chemicals, Part VIII(A(3,4, 9)) for Schedule-3 chemicals and Part IX (A(1, 3) for other chemical production facilities.
renders it possible that the EC be informed of any ambiguities in the course of the inspection.

*Exchange of information between the States Parties through the TS*

There is not only a routine flow of information within the OPCW, from the TS to the EC, but also between the States Parties, through the TS. The Confidentiality Annex makes it clear that the TS shall distribute specific information it receives from a State Party routinely to all States Parties. Part A(2(b)) provides that all data and documents obtained by the TS shall be evaluated by the appropriate unit of the TS in order to establish whether they contain confidential information.

Data required by States Parties to allow them to keep abreast of the continued compliance with the CWC by other States Parties shall be routinely provided by the TS. Such data shall encompass: (i) the initial and annual Reports and Declarations provided by States Parties under articles III, IV, V and VI, in accordance with the provisions set forth in the Verification Annex; (ii) general reports on the results and effectiveness of verification activities; and (iii) information to be supplied to all States Parties in accordance with the provisions of the CWC.

Confidential information shall not be released. Information shall be considered confidential if it is so designated by the State Party from which the information was obtained and to which the information refers, or in the judgement of the D-G, its unauthorised disclosure could reasonably be expected to cause damage to the State Party to which it refers or to the mechanisms for implementation of the CWC (Conf. Annex Part A(2(a)).

**4.1.5 Information relating to assistance and protection against chemical weapons**

Since the (threat of) use of chemical weapons constitutes the most serious danger to the CWC, there are separate provisions on information to cope specifically with this danger. Art. X of the CWC arranges for general technical assistance and protection to States Parties by way of co-ordination and delivery of, *inter alia*, detection equipment, alarm systems, protective equipment, decontamination equipment, medical antidotes and advice on any of the protective measures (X(1)). In connection with this, the TS shall establish a data bank containing freely available information concerning various means of protection against chemical weapons as well as such information as provided by States Parties (X(5)). Each State Party undertakes to provide assistance through the OPCW and shall contribute to a 'voluntary fund for assistance' (X(7(a)), conclude agreements with the OPCW concerning the procurement of assistance or declare the kind of assistance it might provide in response to an appeal by the OPCW (X(7)). Most of these measures amount to general exchanges of information that may be of help to a State Party that suffers from the use or threat of use of
chemical weapons. It is made explicit that nothing in the CWC shall be interpreted as impeding the right of States to request and provide bilateral assistance and to conclude individual agreements with other States Parties concerning the emergency procurement of assistance (X(6)).

4.1.6 Monitoring methods in the context of inspections
Methods of permanent monitoring are provided in the CWC in the context of on-site inspections (in itself primarily used as a method of verification).628 Where applicable, the TS shall have the right to have continuous monitoring methods and systems and seals installed, to use them in conformity with the relevant provisions of the CWC and the facility agreements between States Parties and the OPCW (See Part III(B)(10)). The inspected State Party shall provide the necessary preparation and support for the establishment of the monitoring methods and systems. The support requested from the inspected State Party includes that the inspected State Party shall notify the TS if an event occurs or may occur at a facility where monitoring methods are installed, which may have an impact on the monitoring system.629 Hence, even the mere possibility of the occurrence of events having an impact on the monitoring system warrants notification. In case of anomaly regarding the monitoring system, the TS shall examine and determine whether this anomaly results from equipment malfunction or activities at the facility. It may initiate inspections or visits to the facility to immediately ascertain the actual situation. The TS shall report any problem to the inspected State Party which shall assist in its resolution (Part III(B), par. 16).

4.2 Verification provisions in the CWC

General remarks
As mentioned, the provisions on verification of the CWC are directly connected to, and largely conditioned by, the Declarations made by the States Parties in the phase of monitoring. The process of verification inter alia provides for the systematic verification of the accuracy of those Declarations. Whereas Art. IV, which provides for the framework of verification of chemical weapons destruction, is linked to the Declarations on chemical weapons (and old and abandoned ones), Art. V is linked to the Declarations on the CWPFs and other facilities. Detailed operational and other procedures for the implementation of these obligations are set forth in separate ‘Parts’ of the Verification Annex.

628 See Arts. IV(3, 5), V(3, 7(b), 15) and VI(3).
629 Part III(B), par. 14. Pursuant to par. 15, the inspection team shall verify during inspection that the monitoring system functions correctly.
The most important fact-finding method of the CWC is on-site inspection. Apart from ‘initial’ inspections to verify the Declarations made, several inspection procedures exist, of a ‘routine’ as well as of a ‘challenge’ nature. Routine inspection is the primary means to verify compliance under the CWC, while challenge inspection and investigations of alleged use serve to fill the remaining gaps in the overall verification system. The CWC has an international Inspectorate, consisting of inspectors and inspection-assistants that are designated by the TS. Verification activities under the CWC shall only be performed by designated inspectors and inspection assistants (Part II, par. 3). The inspectors enjoy privileges and immunities that are linked to the effective exercise of their functions (Part II, par. 10-15). Abuse of these privileges and immunities may have serious consequences: the D-G may even expressly waive the immunity of the inspectors under certain conditions (Part II, par. 13-14). Only objects which States Parties have declared are liable to routine inspection by the CWC Inspectorate. The object to be inspected shall be chosen by the TS in such a way as to preclude the prediction of precisely when this will happen. As such, a small element of surprise in the ‘routine’ on-site verification is retained as much as possible under the circumstances. In general, the inspected State Party shall be notified of inspections not less than 24 hours in advance of the planned arrival of the inspection team and initial inspections shall be notified not less than 72 hours in advance (Part II(C), par. 17, 18). Furthermore, the inspection team shall have unimpeded access to inspection sites and inspectors shall have the right to interview facility personnel and to have samples taken and analysed (See Part II, par. 45-58). Still, in carrying out their inspection, the inspection team is bound to strictly observe the instructions of the D-G to the team for the conduct of a particular inspection as laid down in the inspection mandate issued by the D-G, and must refrain from activities going beyond this mandate (See Part I(14) and Part II(39)). As will become clear, the methods of fact-finding of the verification process in the CWC are used in various situations for various purposes and with accordingly various institutional designs which entail specific rules and procedures. Regarding ‘routine’ inspections it is expressly stipulated that special provisions will take precedence where they differ from the general provisions (Part II(66)).

630 According to Ver. Annex Part I (‘Definitions’), par. 11, “initial inspection” means the first on-site inspection of facilities to verify declarations submitted pursuant to articles III, IV, V and VI and the Verification Annex itself. In Ver. Annex Part I, par. 3, “Challenge Inspection” is defined as ‘the inspection of any facility or location in the territory or in any other place under the jurisdiction or control of a State Party requested by another State Party pursuant to article IX, par. 8 to 25’. There is no mention of ‘Routine Inspection’ in the definitions; still there is reference to challenge inspections as opposed to ‘routine inspection activities’, e.g. in Annex Part X(A), par. 1.

In the CWC, account is being taken of agreements concluded earlier on the same subject matter between two or more States Parties to the Convention. In carrying out verification activities, the OPCW shall consider measures to avoid unnecessary duplication of bilateral or multilateral agreements on verification of chemical weapons storage and their destruction among States Parties. To this end, the EC shall decide to limit verification to measures complementary to those undertaken pursuant to such a bilateral or multilateral agreement, if it considers that the verification provisions of the agreement and the CWC are consistent, implementation of such an agreement provides for sufficient assurance of compliance with the relevant provisions of the CWC, and parties to the agreement keep the OPCW fully informed about their verification activities (Art. IV(13); Art. V(16)).

From this it is clear that the essence of the verification process (of both the CWC and the other agreements) is the 'sufficient assurance' of compliance.

4.2.1 Stage 1 of the verification process: fact-finding

4.2.1.1 Fact-finding with respect to chemical weapons

Verification of Declarations on chemical weapons - Art. IV
Each State Party shall, immediately after the Declarations with respect to chemical weapons (under Art. III(1(a)) have been submitted, provide access to all chemical weapons its owns or possesses, or that are located in any place under its jurisdiction or control (except old and abandoned chemical weapons), for the purpose of systematic verification of the Declaration through on-site inspection (Art. IV(4)). The precise purpose of the verification of Declarations shall be to confirm through on-site inspection the accuracy of the relevant Declarations made pursuant to Art. III (See Part IV(A(37))). The verification shall be conducted promptly after a Declaration is submitted. Agreed seals, markers or other inventory control procedures shall be employed, as appropriate, to facilitate an accurate inventory of the chemical weapons at each storage facility (Part IV(A(39))).

Verification of chemical weapons at storage facilities - Art. IV
Art. IV(3) provides that all locations at which chemical weapons which are owned or possessed by a State, or located in any place under its jurisdiction or control (except old and abandoned chemical weapons) are stored or destroyed, shall be subject to systematic verification through on-site inspection and monitoring with on-site methods. Each State Party shall

632 If the EC takes a decision concerning overlap of the Convention with a bilateral or multilateral agreement, the OPCW shall still have the right to monitor the implementation of such agreement (See Art. IV(14); Art. V(17)). As a consequence, the State Party shall still have the obligation to provide Declarations pursuant to Arts. III, IV and V of the CWC and Part IV(A) and Part V of its Verification Annex (Art. IV(15); Art. V(18)).
provide access to any chemical weapons destruction facilities and their storage areas, that it owns or possesses, or that are located in any place under its jurisdiction or control, for the purpose of systematic verification through on-site inspection and monitoring with on-site methods (IV(5)). Furthermore, Art. IV(4) provides that each State party shall not remove any of these chemical weapons, except to a chemical weapons destruction facility, and that it shall provide access to such chemical weapons, for the purpose of systematic on-site verification. The systematic verification of storage facilities is performed in order to ensure that no undetected removal of chemical weapons from such facilities takes place (Part IV (A), par. 41). The systematic verification shall be initiated as soon as possible after the Declaration of chemical weapons has been made and shall continue until all chemical weapons have been removed from the storage facility. It shall, in accordance with the facility agreement, combine on-site inspection and monitoring with on-site methods (Part IV(A), par. 42). An initial inspection of the declared facility shall be conducted promptly after the facility is declared. The TS is to choose the precise storage facility to be inspected in such a way as to preclude the prediction of precisely when the facility is to be inspected (Part IV(A), par. 44). The TS will notify the State Party concerned of its decision to inspect a storage facility 48 hours before the planned arrival of the inspection team (Part IV(A), par. 45). In drawing up the inventory of the facility, the inspectors have unimpeded access to all parts of the storage facility and have the right to designate munitions, devices, and containers from which samples are to be taken, and to affix unique tags to them (Part IV(A), par. 49).

**Verification of plans for the destruction of chemical weapons - Art. IV**

Pursuant to Art. IV(6), each State Party shall destroy all chemical weapons it owns or possesses, or that are located in any place under its jurisdiction or control (except old and abandoned chemical weapons), in accordance with the agreed rate and sequence of destruction (the ‘order of destruction’).\(^{633}\) ‘Destruction of chemical weapons’ means a process by which chemicals are converted in an essentially irreversible way to a form unsuitable for production of chemical weapons, and which in an irreversible manner renders munitions and other devices unusable as such (Part IV(A), par. 12). Destruction shall take place only at specifically designated and

\(^{633}\) The destruction process has started by April 1999 (“no later than two years after the CWC enters into force”), and shall finish no later than 10 years after entry into force (by the year 2007). The CWC sets a minimum standard: a State Party is not precluded from destroying chemical weapons at a faster rate (See Art. IV(6)). Pursuant to Art. IV(8), if a State ratifies or accedes to the CWC after the 10-year period for destruction, it shall destroy chemical weapons it owns, possesses, or that are located in any place under its jurisdiction or control (except old and abandoned chemical weapons) as soon as possible. The order of destruction and procedures for stringent verification for such a State shall be determined by the EC.
appropriately designed and equipped facilities; processes of destruction that are not allowed to be used are dumping in any body of water, land burial or open-pit burning (Part IV(A), par. 13). The ‘order of destruction’ is determined by dividing the chemical weapons declared by each State Party into three categories: Category 1 are the chemical weapons on the basis of Schedule-1 chemicals and their parts and components; Category 2 are chemical weapons on the basis of all other chemicals and their parts and components; Category 3 are unfilled munitions and devices, and equipment specifically designed for use directly in connection with employment of chemical weapons (Part IV(A), par. 16). The CWC establishes four phases of destruction deadlines for Category 1 chemical weapons. Category 2 and 3 chemical weapons are both to be destroyed in equal time-limits, and for the destruction of binary and multi-component chemical weapons there is a specific arrangement (see Part IV(A), par. 17-19). The general plans for destruction of chemical weapons that have been submitted by the States Parties, shall be reviewed by the EC, that shall thereupon assess their conformity with the ‘order of destruction’. The EC shall consult with any State Party whose plan does not conform to the ‘order of destruction’, with the objective of bringing the plan into conformity with that (Part IV(A), par. 20).

The percentages and time-limits set in the provisions concerning the levels of destruction to be achieved enable the exercise of strict supervision of compliance with those provisions, even though it is provided that if a State Party, due to exceptional circumstances beyond its control, believes it cannot achieve the level of destruction specified for phases one to three of Category 1 chemical weapons, it may propose changes in those levels (Part IV(A), par. 21-23). Apart from the procedure for modification of destruction levels, there is one for extension of the deadline for completion of destruction to a maximum of 15 years after entry into force (Part IV(A), par. 24-28).

**Verification of destruction of chemical weapons - Art. IV**

The purpose of verification of the destruction-process of chemical weapons shall be (a) to confirm the identity and quantity of the chemical weapons stocks to be destroyed; and (b) to confirm that these stocks have been destroyed (Part IV(A), par. 50). Regarding chemical weapons destruction operations, the TS shall prepare a draft plan for inspecting the destruction of chemical weapons at each destruction facility. The inspected State Party is allowed to comment on the inspection-plan not less than 270 days before the facility begins destruction operations. Any differences between the TS and the inspected State Party should be resolved by consultations. Any unresolved matter shall be forwarded to the EC for appropriate action with a view to facilitating the full implementation of the Convention (par. 53 of Part IV(A)). It is clear that this procedure for the ‘settlement of differences’
is part of the verification process and that solutions are sought ‘internally’, within the Organisation. ‘Internal’ solutions are also sought in case difficulties arise regarding the agreed plans for verification. These plans shall be forwarded to the EC for review (Part IV(A), par. 56). Each member of the EC may consult with the TS on any issues regarding the adequacy of the plan for verification. If there are no objections by any member of the EC, the plan shall be put into action.\footnote{See par. 57 of Part IV(A). This means that consensus in the EC is required before plans for verification can be put into action.} If there are any difficulties, the EC shall enter into consultations with the State party to reconcile them. If any difficulties remain unresolved they shall be referred to the CSP (par. 58 of Part IV(A)).

Before each chemical weapons destruction facility begins destruction operations, the TS shall conduct an initial visit to each facility, to familiarise itself with the facility and assess the adequacy of the inspection plan (par. 54 of part IV(A)). Inspectors shall be granted access to each chemical weapons destruction facility, not less than 60 days before the commencement of the destruction at the facility for the purpose of installing and testing inspection equipment (par. 60 of Part IV(A)). The inspectors shall verify the arrival of the chemical weapons at the destruction facility and the storing of the chemical weapons (par. 62 of Part IV(A)). Seals, markers or other inventory control procedures can be used on the spot to facilitate accurate inventory of the chemical weapons prior to destruction. As long as a storage facility remains located at the destruction facility, both facilities will be subject to systematic verification (par. 63 of Part IV(A)). Inspectors will be granted access to the destruction facilities and have the right to verify through their physical presence and monitoring with on-site methods that the destruction process has been completed and that no chemical weapons are diverted (par. 66 of Part IV(A)). After the completion of each period of destruction, the TS shall confirm the Declaration of each State Party, reporting the completion of destruction of the designated quantity of chemical weapons (par. 69 of Part IV(A)). As such, the ‘subjective’ Declarations are turned into records of ‘objectively’ ascertained facts.

4.2.1.2 Fact-finding with respect to CWPF and other facilities

Verification of Declarations on CWPF - Art.V

Each State Party shall, immediately after the Declaration regarding CWPF has been made, provide access to the CWPF its owns or possesses, or that are located in any place under its jurisdiction or control (Art. V(6)). Each declared CWPF subject to on-site inspection pursuant to Art. V(3) shall receive an initial inspection promptly after the facility is declared. The TS
shall conduct the initial inspection of each CWPF in the period between 90 and 120 days after entry into force of the CWC for the State Party concerned (Part V(43)). If, on the basis of the initial inspection, the D-G believes that additional measures are necessary to inactivate the inspected facility in accordance with the Convention, the D-G may request the State Party concerned that such measures be implemented by the inspected State Party within 180 days after entry into force of the CWC for it. At its discretion, the inspected State Party may satisfy this request. If it does not satisfy this request, the inspected State Party and the D-G shall consult to resolve the matter (Part V(47)).

Verification of the non-reactivating of CWPF - Art. V

Art. V sets forth the obligations of the States Parties with regard to CWPF like Art. IV does with regard to chemical weapons. All CWPF owned or possessed by a State Party, or that are located in any place under its jurisdiction or control, shall be subject to systematic verification through on-site inspection and monitoring with on-site methods (Art. V(1, 3)). Logically, it is provided that no State shall construct any new CWPF or modify any existing facilities for the purpose of chemical weapons production or for any other activity prohibited under the CWC (See Art. V(5)).

Each State Party shall close all CWPF it owns or possesses, or that are located in any place under its jurisdiction or control not later than 90 days after entry into force of the CWC for it, and give notice thereof (Art. V(7(a))). After its closure, the State Party shall provide access to the facility for the purpose of systematic verification through on-site inspection and monitoring with on-site methods in order to ensure that the facility remains closed and is subsequently destroyed (Art. V(7(b))). The purpose of systematic verification of a CWPF shall be to ensure that any resumption of production of chemical weapons or removal of declared items will be detected at this facility (par. 48 of Part V of the Verification Annex). During each calendar year, the TS shall be permitted to conduct up to four inspections of each CWPF (par. 51 of Part V). The D-G shall notify the State Party of his decision to inspect or visit a CWPF 48 hours before the planned arrival of the inspectors. Inspectors shall, in accordance with the facility agreements, have unimpeded access to all parts of the CWPF (par. 53 of Part V). The particular CWPF to be inspected shall be chosen by the TS in such a way as to preclude the prediction of precisely when the facility is to be inspected (See par. 52 and 54 of Part V).

635 That is to say: the CWC does not set forth any further criteria of procedures that must be satisfied by the State Party in order for it to comply with the request of the D-G.
Verification of destruction of CWPF - Art. V

Pursuant to Art. V(8), each State Party shall destroy all CWPF it owns or possesses, or that are located in any place under its jurisdiction or control, related facilities and equipment, in accordance with an agreed rate and sequence of destruction ('order of destruction').\(^\text{636}\) The order of destruction is based on the obligations specified in Art. I and the other articles of the CWC, including obligations regarding systematic on-site verification (Part V, par. 28). For example, CWPF that were used to produce Schedule-1 chemicals shall be destroyed, starting one year after entry into force of the Convention for the State Party concerned, within 10 years after entry into force, in three separate destruction periods (years 2-5, 6-8, and 9-10; see Part V(30)). Other CWPF shall be destroyed starting one year after entry into force of the CWC for the State Party concerned, and be completed within five years after entry into force (Part V(31)).

The purpose of systematic verification of the destruction of CWPF shall be to confirm that the facility is destroyed in accordance with the obligations under the CWC and that each item on the declared inventory is destroyed in accordance with the agreed detailed plan for destruction (par. 55 of Part V of the Verification Annex). The detailed plans for the destruction of CWPF shall be submitted by each State Party pursuant to Art. V(9(a)). To ensure that the provisions of Art. V and Part V of the Verification Annex are fulfilled, the combined plans for destruction and verification shall be agreed upon between the EC and the State Party (Part V, par. 37). Each State Party shall certify, not later than 30 days after the destruction process has been completed, that all such CWPF have been destroyed (Art. V(9(c))). When all items on the declared inventory have been destroyed, the TS shall confirm the Declaration of the State Party to that effect. After this confirmation, the TS shall terminate the systematic verification of the CWPF and shall promptly remove all devices and monitoring methods installed by the inspectors, and the State Party shall make the Declaration that the facility has been destroyed (par. 56 and 57 of Part V). Through these procedures, the 'subjective' Declarations are turned into 'objective' records of ascertained facts.

\(^{636}\) To be performed in accordance with the Verification Annex. As with chemical weapons, a State Party shall begin destroying CWPF not later than one year after entry into force for it (note, that destruction of chemical weapons must begin two years after entry into force), and will finish not later than 10 years after entry into force of the CWC. A State Party is not precluded from destroying such facilities at a faster rate: the CWC again sets a minimum-standard (Art. V(8)). Again, if a State ratifies or accedes after the 10-year period for destruction, it shall destroy CWPF it owns or possesses, or that are located in any place under its jurisdiction or control as soon as possible. The order of destruction and procedures for stringent verification for such a State shall be determined by the EC (Art. V(10)).
Verification of temporary conversion of CWPF into chemical weapons destruction facilities - Art. V

The verification system of the CWC centres around the main obligations that the CWC entails, viz. the eventual destruction of both chemical weapons and CWPF. The CWPF may be temporarily converted for destruction of chemical weapons (Part V(18-25)). Such a converted facility must in its turn be destroyed as soon as it is no longer in use for destruction of chemical weapons but, in any case, not later than 10 years after entry into force of the CWC (Art. V(12); see also Part V, par. 23). If a State Party intends to convert temporarily a CWPF into a chemical weapons destruction facility, it shall notify the TS not less than 150 days before undertaking any conversion activities (Part V(34)). Not later than 30 days after entry into force of the CWC for the State Party concerned, or not later than 30 days after a decision has been taken (by the State Party) for temporary conversion, a general facility conversion plan shall be submitted to the TS, and subsequently annual plans (Part V, par. 20). Inspectors shall have the right to visit the CWPF that is temporarily to be converted into a destruction facility. The TS and the inspected State Party shall conclude a transition agreement containing additional inspection measures for the temporary conversion period. The agreement shall specify inspection procedures that will provide confidence that no chemical weapons production takes place during the conversion process (par. 59 of Part V). Once the facility begins operating as a chemical weapons destruction facility, it shall be subject to the provisions of Part IV(A) of the Verification Annex (par. 61 of Part V).

Verification of conversion of CWPF to purposes not prohibited under the CWC - Art. V

Pursuant to par. 13 of Art. V, a State Party may request, in exceptional cases of compelling need, permission to use a CWPF that it owns or possesses, or that is located in any place under its jurisdiction or control, for purposes not prohibited under the Convention. The request for conversion may be made for any facility that a State Party is already using for purposes not prohibited under the CWC before the CWC enters into force for it, or that it plans to use for such purposes (Part V(D(64)). The crux of the matter is that the State Party will ensure the prevention of standby chemical weapons production capability at the facility (See Art. V, par. 14 and Part V(D), par. 65(c) and 66 (c)). As a condition for conversion, all specialised equipment at the facility must be destroyed and all special features of buildings and structures that distinguish them from buildings and structures normally used for purposes not prohibited under the CWC and not involving Schedule-1 chemicals must be eliminated (Part V(D), par. 70). Conversion shall be completed not later than six years after entry into force of the Convention.637

637 Ver. Annex, Part V(D), par. 72. It should be noted that the CWC at this point speaks of
Verification of the facility that is to be converted for purposes not prohibited under the CWC takes place by way of an initial inspection, which shall be conducted by the TS. The purpose of this inspection shall be to determine the accuracy of the information provided in the request, to obtain information on the technical characteristics of the proposed converted facility, and to assess the conditions under which use for purposes not prohibited under the Convention may be permitted. The D-G shall promptly submit a report to the EC, the CSP, and all States Parties, containing his recommendations on the measures necessary to convert the facility to purposes not prohibited under the Convention and to provide assurance that the converted facility will be used only for purposes not prohibited under the CWC (Part V(D), par. 73).

Note, that the D-G only makes recommendations; the eventual decision on the request for conversion constitutes a particular procedure by itself. It is the CSP that, upon recommendation of the EC, shall decide, taking into account the report and any views expressed by States Parties, whether or not to approve the request, and shall establish the conditions upon which approval is contingent. In case any State Party objects to approval of the request, the interested States Parties shall seek a mutually acceptable solution among themselves, after which the CSP shall decide as yet (Part V(D), par. 75). If the request is approved, a facility agreement shall be completed, containing the conditions under which the conversion and use of the facility is permitted, including measures for verification (Part V(D), par. 76). Measures for verification are thus made direct part of the conditions for conversion. The CWC sets separate, specific verification procedures, attuned to each specific case of conversion of a CWPF to purposes not prohibited under the CWC. The verification of this type of conversion is addressed with a range of methods similar to those used in CWC verification in general. The State Party planning the conversion of a CWPF to purposes not prohibited, shall provide the TS with detailed plans for conversion, no less than 180 days before conversion. The State Party, as part of its detailed plans, shall also propose measures for verification of the conversion (Part V(D), par. 77-78). On the basis of the detailed plans of the State Party, the TS shall prepare a plan for verifying the conversion of the facility, consulting closely with the State Party. The position of the State Party seems remarkably strong: any differences between it and the TS shall be resolved by way of consultations and unresolved matters shall be forwarded to the EC 'for appropriate action with a view to facilitate the full implementation of this Convention' (Part V(D), par. 79). However, the combined plans for conversion and verification, that shall be agreed upon by

*entry into force* of the CWC instead of 'entry into force for this State Party', as it commonly does. This implies that all conversion activities must be completed by 2003, regardless of on what moment the State Party concerned made the conversion-request (within 30 days after entry into force for it; see Ver. Annex, Part V(D), par. 65).
the EC and the State Party, shall only be put into action if there are no objections by any member of the EC. If there are any difficulties, the EC should enter into consultations with the State Party to reconcile them. If any difficulties remain unresolved, they should be referred to the CSP (Part V(D), par. 82). Thus, all organs of the OPCW have been assigned a role in different stages of the conversion process.

If difficulties remain, the problem arises that the State Party has already been given approval by the CSP to convert the facility to purposes not prohibited. Therefore, if agreement is not reached with the EC on aspects of verification, or if the approved verification plan cannot be put into action, verification of conversion shall proceed through continuous monitoring with on-site methods and physical presence of inspectors. Inspectors present in situ shall verify the conversion process and shall confirm the conversion (Part V(D), par. 83-84). Taking into account the importance of adequately verifying this type of conversion, it appears that this arrangement confirms the view that permanent monitoring methods such as these are generally regarded as being the most stringent and effective supervisory methods available.

The importance attributed to stringent verification of conversion of CWPFs to purposes not prohibited also becomes clear from the 'post conversion' verification regime, laid down in Part V(D), par. 85. Pursuant to this paragraph, for the 10 years after the D-G certifies that conversion is complete, the State Party is under the obligation to provide unimpeded access to the inspectors to the facility at any time. The inspectors have been granted the right to verify that the activities at the facility are consistent with any conditions established under Part V(D) of the Verification Annex, as well as conditions established by the EC and the CSP, and, to this end inter alia have the right to receive samples and the right to managed access to the plant site at which the facility is located. The State Party has the obligation to report annually on the activities of the converted facility, and, upon completion of the 10-year period, the EC shall decide, upon recommendation of the TS, on the nature of continued verification measures. This means, that even after the 10-year period, an ongoing watch against standby chemical weapons production capability at the converted facility is upheld.

Verification of Declarations relating to facilities used for purposes not prohibited under the CWC - Art. VI

Like the Declarations themselves, the provisions of verification of those Declarations are divergent depending on the type of chemicals concerned (Schedule 1, 2 or 3). With regard to the Schedule-1 chemicals, it is provided that States Parties shall not produce, acquire, retain or use those chemicals outside the territories of States Parties and shall not transfer such chemicals outside their territories except to other States Parties and only for research,
medical, pharmaceutical or protective purposes (See Part VI(A(1-3)). As mentioned, the production of Schedule-1 chemicals may only take place at a SSSF (Part VI(C(8)) or 'other facilities' for very specific purposes (Part VI(C(10-12))). The SSSF shall be subject to systematic verification through on-site inspection and monitoring with on-site methods, so as to verify that the quantities of Schedule-1 chemicals produced are correctly declared, and, in particular, that their aggregate amount does not exceed one tonne (Part VI(E(21, 22))). The number, intensity, duration, timing and mode of inspections for a particular facility (be it a SSSF or 'other facility') shall be based on the risk to the object and purpose of the CWC posed by the quantities of chemicals produced, the characteristics of the facility and the nature of the activities carried out there.\(^{638}\)

The regime for Schedule-2 chemicals and facilities related to such chemicals provides for verification by way of (initial and subsequent) on-site inspections (Part VII(B(12, 14))). The general aim of the inspections shall be to verify that activities are in accordance with the obligations under the CWC and consistent with the information provided in Declarations (Part VII(B(15))). After the initial inspection of such plant sites, which shall take place 'preferably' not later than three years after entry into force of the CWC, subsequent inspections of particular plant sites will be carried out by the TS giving due consideration to the risk to the object and purpose of the CWC posed by the relevant chemical, the characteristics of the plant site and the nature of the activities carried out there, and in such a way so as to preclude the prediction of exactly when the inspection of the plant site will take place (See Part VII(B(16, 19-21))). The focus of the inspections (no more than two per calendar year) shall be the declared Schedule-2 plant(s) within the declared plant site. To provide assurance that there has been no diversion of the declared chemical and that production has been consistent with Declarations, there shall be access to records, sampling and analysis (this also serves to ensure that no Schedule-1 chemicals are present), and Schedule-2 chemicals shall only be transferred to or received from States Parties.\(^{639}\)

Schedule-3 chemicals too have their own regime, requiring the States Parties first to provide initial and subsequently annual Declarations on national aggregate data on the quantities produced, imported and exported of each Schedule-3 chemical, initial and annual Declarations on previous and anticipated activities for all plant sites that comprise one or more plants which produced during the previous calendar year or are anticipated to

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638 Part. VI(E(23, 30)). Appropriate guidelines for the inspections shall be considered and approved by the CSP pursuant to Art. VIII, par. 21(i). See on this 'risk assessment' Marauhn (1998), p. 231.

639 Part VII(B(25-31)). During an interim period of three years, transfers of Schedule-2 chemicals to States not Parties to the CWC is allowed through special procedures making use of certificates (Part VII(B(32))).
produce in the next calendar year more than 30 tonnes of a Schedule-3 chemical, as well as Declarations on all plant sites comprising plants that at any time since 1 January 1946 produced a Schedule-3 chemical for chemical weapons purposes (Part VIII(A(1-11)). The TS transmits the information of the Declarations to States Parties upon request (Part VIII(A(11)). Verification of the declared plant sites shall - randomly selected by the TS, with a maximum of two inspections per plant per year - take place with the general aim to verify that activities are consistent with the information to be provided in the Declarations, and in particular, also to verify the absence of Schedule-1 chemicals (Part VIII(B(14-17)). Apart from access to records, the absence of undeclared scheduled chemicals may take place by way of sampling and on-site analysis. In case of unresolved ambiguities, samples may be analysed in a designated off-site laboratory, subject to the inspected State Party's agreement (Part VIII(B(22)). Transfer of Schedule-3 chemicals to States not Parties to the CWC is not prohibited, but each State Party is under the obligation to adopt the necessary measures to ensure that the transferred chemicals shall only be used for purposes not prohibited under the Convention (Part VIII(C(27)).

Finally, there is a special regime for 'other chemical production facilities' 640. A list with these chemical production facilities shall be submitted as part of the initial Declaration that is submitted by the States Parties pursuant to Art. VI(7) of the CWC. Verification shall be carried out through on-site inspections, randomly selected by the TS and with a maximum of two inspections per plant site per year, with the general aim to verify that activities are consistent with the information to be provided in Declarations, and, in particular, to verify the absence of any Schedule-1 chemical, especially its production (Part IX(B(9-14)). Apart from access to records, sampling and on-site analysis may be undertaken to check for the absence of undeclared scheduled chemicals. In cases of unresolved ambiguities, samples may be analysed in a designated off-site laboratory, subject to the inspected State Party’s agreement (Part IX(B(18-19)). The implementation of this inspection regime shall start four years after entry into force of the Convention (See Part IX(C)).

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640 Under this heading are comprised those plant sites that (a) produced by synthesis during the previous calendar year more than 200 tonnes of unscheduled discrete organic chemicals; or (b) comprise one or more plants which produced by synthesis during the previous calendar year more than 30 tonnes of an unscheduled discrete organic chemical containing the elements phosphorus, sulphur or fluorine ('PSF-plants'). These do not include plant sites that exclusively produced explosives or hydrocarbons (Part IX(A(1-2))).
4.2.1.3 Methods of additional fact-finding

Additional fact-finding by way of requests for clarifications during an inspection

Pursuant to Verification Annex Part II, par. 51, inspectors shall have the right to request clarifications in connection with ambiguities that arise during an inspection. This right is applicable to all kinds of inspections, whether initial, of a ‘routine’ or of a ‘challenge’ nature, and whether connected to the verification of the regimes for Schedule-1, 2, or 3 chemicals (cf. Part II, par. 66). Requests for clarification shall be made promptly through the representative of the inspected State Party. The representative shall provide the inspection team, during the inspection, with such clarification as may be necessary to remove the ambiguity. If the ambiguity cannot be removed during the inspection, the inspectors shall notify the TS immediately. Any unresolved question as well as relevant clarifications shall be included in the inspection report.

Additional fact-finding by way of consultation and co-operation

Art. IX(1) provides that States Parties shall consult and co-operate on any matter which may be raised relating to the object and purpose, or the implementation of the provisions, of the CWC. Since reference is made to a trigger (in that matters ‘may be raised’), implying that the activities are not of an ongoing nature, consultation and co-operation in this context can be considered methods of verification. Still, the procedures of consultation and co-operation offer more than a means of additional fact-finding. The additional facts found regarding relevant behaviour are at the same time under review so as to assess if even more additional information is needed. It should be noted, that the procedures of consultation and co-operation are not by themselves sufficient to review and assess possible non-compliance. They are more of a ‘preventive’ nature, and may also be termed procedures of ‘conflict management’. Like many other arms control treaties, the CWC offers two separate forms of institutional design of the said methods. First of all, States Parties are explicitly allowed to consult and co-operate ‘directly among themselves’ (IX(1)). The second option for the States Parties is to consult and co-operate ‘through the OPCW or other appropriate international procedures, including procedures within the framework of the UN and in accordance with its Charter’ (IX(1)). In this general provision a reference can be read to specific means of dispute settlement (Art. 33 UN Charter).

In par. 2 of Art. IX, the ‘inter-State’ variant has been modestly elaborated. With regard to matters which may cause doubt about compliance with the

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641 See Kurzide (1998), p. 299, according to whom the first purpose of the procedure for consultation and co-operation is the prevention of disputes.
CWC, or which give rise to concerns about a related matter which may be considered ambiguous, the States Parties should, whenever possible, first make every effort to clarify and resolve the said doubts or concerns through exchange of information and consultations among themselves. A State Party which receives a request from another State Party for clarification of any matter which the requesting State Party believes causes such a doubt or concern shall provide the requesting State Party as soon as possible, but in any case not later than 10 days after the request, with information sufficient to answer the doubt or concern raised along with the explanation of how the information provided resolves the matter (IX(2)). The time-frame of 10 days is the only standard set by the Convention in this respect; the last part of par. 2 provides that nothing in the CWC shall affect the right of any two or more States parties to arrange by mutual consent for inspections or any other procedures among themselves to clarify and resolve any matter which may cause doubt about compliance or gives rise to a concern about a related matter which may be considered ambiguous. Such arrangements shall not affect the rights and obligations of any State Party under other provisions of the CWC. Apparently, the CWC does not want to restrain States Parties in any way whatsoever if it comes to discussing, clarifying and thereby resolving possible differences about ambiguous events. Alternatively, or perhaps subsequent to the inter-State activities in case these have not brought about a solution, in par. 3-7 of Art. IX a specific procedure for the requesting of clarification through the organs of the OPCW is available. A State Party shall have the right to request the EC to assist in clarifying any situation which may be considered ambiguous or which gives rise to a concern about the possible non-compliance of another State Party with the CWC. The EC shall provide appropriate information in its possession relevant to such a concern (IX(3)). The EC shall inform the States Parties about any request for clarification provided in Art. IX (IX(6)).

A State Party has the right to demonstrate compliance by requesting the EC to clarify any situation which has been considered ambiguous or has given rise to a concern about its possible non-compliance with the CWC (IX(5)). Similarly, a State Party to the CWC shall have the right to request the EC to obtain clarification from another State Party. The procedure that is set in motion if a State Party makes use of this latter right, is that the EC forwards the request for clarification to the State Party concerned through the D-G (within 24 hours); the requested State Party shall provide the clarification to the EC as soon as possible (no later than 10 days after the receipt of the request); the EC shall take note of the clarification and forwards it to the requesting State Party (within 24 hours after receipt)

642 The paragraph states further that the EC shall respond 'by providing such assistance as appropriate'. This wording leaves full discretion to the EC with regard to its reaction. See Krutsch & Trapp (1994), p. 180. Robinson (1995), p. 499, suggests that one of the options will be that of organising a special inspection by the TS.
(IX(4(a)-(c)). So far, there is little difference with the bilateral procedure for clarification of paragraph 2. But if the requesting State Party deems the clarification obtained via the EC to be inadequate, it shall have the right to request the EC to obtain from the requested State Party further clarification (IX(4(d)). The procedure for obtaining further clarification is quite extensive. In case a State Party requests further clarification, the EC may call on the D-G to establish a group of experts from the TS (or from elsewhere),\(^643\) to examine all available information and data relevant to the situation causing the concern. The group of experts shall submit a factual report to the EC on its findings (IX(4(e)). This latter provision makes explicit that the group of experts will not enter into an assessment of the behaviour of the State Party concerned (nor, for that matter, in a review of the information gathered as confronted with the rules of the CWC).

If the requesting State Party considers the clarification obtained (i.e. both the clarification obtained by the EC from the State Party and the factual report of the group of experts) to be unsatisfactory, it shall have the right to request a special session of the EC. In this special session, in which also States Parties not serving on the EC may take part, the EC shall consider the matter and may recommend any measure it deems appropriate to resolve the situation (IX(4(f)). The EC seems thus to be left with maximal discretion as regards the procedure following a request for further clarification. There is however one limitation: if the doubt or concern of a State Party about possible non-compliance has not been resolved within 60 days after the submission of the request for clarification to the EC, this State Party may request a special session of the CSP.\(^644\) At the special session, the CSP shall consider the matter and may recommend any measure it deems appropriate to resolve the situation. The same procedure applies in case the State Party believes its doubts warrant urgent consideration (IX(7)). In short, eventually all States Parties can participate in a special session of either the EC or the CSP after a request has been made for further clarification for the consideration of ambiguous or doubtful behaviour. Therefore, the discretion in considering the matter of both the EC and the CSP in fact comes down to a discretion of the States Parties participating in the sessions of the organs, with the difference that decisions by the EC are as a rule taken with a two-third majority of its members, whereas the CSP as a rule decides by consensus and may only decide by a two-third majority by special procedure.

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\(^{643}\) That is, ‘in case appropriate staff are not available in the TS’ (IX(4(e)).

\(^{644}\) This special session may be requested by any member and must be supported by one third of the members, in accordance with Art. VIII(12(c)).
Additional fact-finding by way of challenge inspections

Both the bilateral and the institutionalised procedure for the request on clarification (and, as appropriate, further clarification) is without prejudice to the right to request a challenge inspection (IX(2) and (7)). Each State Party has the right to request an on-site challenge inspection of any facility or location in the territory or in any other place under the jurisdiction or control of any other State Party for the sole purpose of clarifying and resolving any questions concerning possible non-compliance with the provisions of the CWC, and to have this inspection conducted anywhere without delay by an inspection team designated by the D-G and in accordance with the Verification Annex of the Convention (IX(8)). The request, to be submitted to the D-G and the EC, shall contain, inter alia, the relevant provisions of the CWC about which the concern of non-compliance has arisen (Part X(B), par. 4(d)). The requesting State Party shall designate the inspection site as specifically as possible, and shall notify the D-G of the location of the inspection site. Note, that an inspection can be requested on 'any' facility or location; challenge inspections may thus also be used to deter chemical weapon production or other such illicit activities within undeclared facilities.\(^{645}\)

The challenge inspection procedure is 'internationalised': for the purpose of verifying compliance with the provisions of the CWC, each State Party shall permit the TS to conduct the on-site challenge inspection (IX(10)).\(^{646}\) The inspection will be performed by inspectors and their assistants especially designated for this function (Part X(A), par. 1). No national of the requesting or the inspected State Party shall be a member of the team (Part X(A), par. 2), but the requesting State Party may send a representative to observe the conduct of the inspection (IX(12)). The D-G shall determine the size of the inspection team, which shall be kept to a minimum necessary for the proper fulfilment of the inspection mandate (Part X(A), par. 2).

The 'speedy' character of the challenge inspection is underlined by the provision that the TS must be in the position to take immediate action on the request, to be confirmed by the D-G (Part X(A), par. 3).\(^{647}\) Each State Party is under the obligation to keep the inspection-request within the scope of the Convention and to refrain from unfounded requests, care being taken to avoid abuse (IX(9)). The EC, to whom the inspection request is presented,\(^{648}\)

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646 The option to conduct an inspection with mutual consent of course remains, but will not be performed through the procedures designed for challenge inspections.

647 The D-G shall transmit the inspection request to the State that is going to be inspected not less than 12 hours before the planned arrival of the inspection team at the point of entry (IX(15). See further Part X(B), par. 6, on the location of the inspection site which is to be provided to the inspected State Party by the D-G within 12 hours before planned arrival of the inspection team. See also Krutzsch & Trapp (1994), p. 182.

648 See Art. IX(13). As mentioned, the request is also presented to the D-G, who shall immediately ascertain that the inspection request meets the requirements specified in Part X,
has the power to decide, not later than 12 hours after having received the inspection request, by a ⅓-majority of all its members against carrying out the challenge inspection, if it considers the inspection request to be frivolous, abusive or clearly beyond the scope of the CWC. As a matter of principle therefore, any inspection requested must be undertaken by the TS, unless the EC decides against carrying out the inspection. It is explicitly stated that the inspection shall be carried out for the sole purpose of determining facts relating to possible non-compliance; consequently, the inspected State Party has the obligation to provide access within the requested site for the sole purpose of establishing facts relevant to the concern regarding non-compliance and has the right to take measures to protect sensitive installations, and to prevent disclosure of confidential information and data not related to the CWC (IX(9), (11)(b, c)). When the inspection request fulfills the requirements, preparations for the challenge inspection shall begin. The D-G shall issue an inspection mandate. The inspection shall be conducted on the basis of an initial inspection-plan, to be prepared by the inspection team after a pre-inspection briefing, which specifies the activities to be carried out by the inspection team, including the specific areas of the site to which access is desired (Part X(B), par. 34). The inspection team shall be guided by the principle of conducting the inspection in the least intrusive manner possible, consistent with the effective and timely accomplishment of its mission (IX(19)).

With regard to the division of rights and obligations between the TS and the inspected State Party during the conduct of challenge inspections, the scales appear to have tipped to some extent in favour of the latter. The inspected State Party, for example, has (at most) 108 hours time to provide access within the requested perimeter to the inspection team after arrival at the point of entry (Part X(C), par. 39), which seems rather long. Furthermore, even though the inspected State Party is to provide full and comprehensive access, it is allowed to propose alternative arrangements to demonstrate compliance with the CWC. For example, the inspected State Party has the right under managed access to take such measures as are (read: it deems) necessary to protect national security (Part X(C), par. 41), which leaves considerable room to the inspected State Party to provide less than full access to the inspection team; if the inspected State Party provides less

par. 4 (IX(14)).

649 As described in par. 8 of Art. IX (IX(17)). In that case, the preparations shall be stopped, no further action on the inspection request shall be taken, and the States Parties concerned shall be informed accordingly (IX(17)). See on the meaning of the terms used, Krutzsch & Trapp (1994), p. 189-190.

650 This is the inspection request in operational terms, which shall conform with the inspection request (IX(18)). The inspection team shall inform the inspected State Party of the inspection mandate upon arrival of the team at the point of entry (Part X(B), par. 12).

651 That is notwithstanding the obligation in the same paragraph not to invoke this right to conceal evasion of obligations not to engage in activities prohibited under the Convention.
than full access to places, activities, or information, it shall be under the obligation to make ‘every reasonable effort’ to provide alternative means to clarify the possible non-compliance concern that generated the challenge inspection (Part X(C), par. 42). This flexible rule of conduct leaves considerable discretion to the inspected State Party. Also, it is provided that in carrying out the challenge inspection in accordance with the inspection request, the inspection team shall only use those methods necessary to provide sufficient relevant facts to clarify the concern about possible non-compliance with the provisions of the CWC, and shall refrain from activities not relevant thereto (Part X(C), par. 44); this provision may offer a criterion for the inspected State Party to obstruct the freedom of activities of the inspection team. Finally, it is stated that the inspection team shall be guided by the principle of conducting the challenge inspection ‘in the least intrusive manner possible’ (Part X(C), par. 45). This provision is remarkable in particular, since a challenge inspection is precisely meant to be an intrusive method ‘of last resort’, to be applied in case other methods have failed to provide sufficient clarity regarding (non-) compliance by the inspected State Party. These provisions, in connection with the ‘managed access’-regime, lay considerable weight upon the consent and ad hoc co-operative attitude of the inspected State Party.

The period of inspection shall not exceed 84 hours, unless extended by agreement with the inspected State Party (Part X(C), par. 57). The final report of the inspection shall contain only factual findings; the only assessment by the inspection team relates to the degree and nature of access and co-operation granted for the satisfactory implementation of the challenge inspection. The final report is distributed by the D-G to the EC and all the States Parties (IX(21)).

4.2.1.4 Fact-finding in regard to assistance and protection against chemical weapons

As remarked, the CWC makes arrangements for the general exchange of information relative to the protection and assistance against chemical weapons in Art. X. The same article contains provisions on cases or situations where a State Party considers that chemical weapons have been used against it, riot control agents have been used against it as a method of warfare, or it is threatened by actions or activities of any State that are prohibited for States Parties by article I of the CWC (X(8)). Note, that the CWC mentions ‘any’ State; this means that protective measures may also be requested in case a State non-Party to the CWC allegedly would have used

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652 The ‘managed access’ regime of Part X(C), par. 46-52 of the Verification Annex, grants, inter alia, rights to the inspected State Party to protect sensitive installations and disclosure of confidential information in accordance with the relevant provisions of the Confidentiality Annex. Furthermore, the inspected State Party has certain ‘obligations’ that have been rather ‘loosely’ formulated as ‘to make every reasonable effort’ (See Part X(C), par. 49-50).
or threatened to use chemical weapons against a State Party to the CWC. In such case, the OPCW shall closely co-operate with the UNS-G. If so requested, the OPCW shall put its resources at the disposal of the UNS-G (See Part XI(E), par. 27).

Each State Party has the right to request and, subject to the procedures of Art. X, receive assistance and protection against the use or threat of use of chemical weapons in any of the three situations mentioned (See X(8)). The request shall be submitted to the D-G, who shall transmit it immediately to the EC and to all States Parties. The fact-finding stage of the alleged use or threat of use of chemical weapons starts when the D-G initiates, not later than 24 hours after receipt of the request, an investigation in order to provide foundation for action subsequent to the first immediate emergency assistance (See X(9)). Procedures that apply after the request for investigating alleged use can be found in Part XI of the Verification Annex. The inspectors for the team are selected from those already assigned for challenge inspections, and additional experts if required (Part XI(B), par. 8). The team has broadly defined access rights, for the effectuation of which the inspection team shall have to consult with the inspected State Party (Part XI(C), par. 15). The inspection team shall send a situation report and progress reports as necessary to the D-G (Part XI(D), par. 22 and 24). The D-G shall complete the investigation within 72 hours and report on the outcomes to the EC (X(9)). The investigation shall establish relevant facts to the request as well as the type and scope of supplementary assistance and protection needed (X(9)).

4.2.2 Stage 2 of the verification process: review

Review after a ‘routine’ inspection

While the CWC is detailed and elaborate in regard to the methods of ascertaining specific facts which are relevant for compliance, the question of the legal evaluation of the facts thus ascertained is only regulated in a fragmentary manner, especially with regard to the method of ‘routine’ inspection. There is little more provided than that upon completion of an inspection the inspection team shall meet with representatives of the inspected State Party and the personnel responsible for the inspection site to review the preliminary findings of the inspection team, presented in written form together with a list of any samples and copies of written information, data and other material to be taken off-site. The meeting also serves to clarify ‘any ambiguities’ in the preliminary findings.

653 If additional time is required, an interim report shall be submitted within 72 hours. Afterwards, new time-frames of 72 hours each may be requested by the D-G (each additional period to be concluded with a new interim report) in order to complete the final report (X(9)).

654 The document shall be signed by the head of the inspection team and countersigned by the representative of the inspected State Party, but the latter only ‘in order to indicate that he has
Review after inspection takes place as well when the EC considers the final inspection report (see *infra*, at ‘assessment’). Finally, it can be upheld that a ‘technical’ review is carried out by the TS of the results of the ‘routine’ inspections that serve to verify the Declarations made regarding the destruction of chemical weapons and CWPF, before the TS can give confirmation of the Declarations concerned (see *supra*).

### Review after a challenge inspection

Detailed information relating to the concerns regarding possible non-compliance with the Convention cited in the request for the challenge-inspection shall be submitted as an Appendix to the final report and be retained within the TS under appropriate safeguards to protect sensitive information (Part X(C), par. 59). Before the final inspection report is presented, two earlier phases of draft reporting are completed. The inspection team shall, within 72 hours after its return to its primary work location, submit a preliminary inspection report to the D-G. The inspection team takes account of the fact that confidential information in the preliminary inspection report shall, if necessary, be processed into less sensitive forms before it is transmitted outside the TS and the inspected State Party. The D-G shall promptly transmit the preliminary inspection report to the requesting State Party, the inspected State Party and to the EC (Part X(C), par. 60). Next, within 20 days after completion of the inspection, a draft final inspection report shall be made available to the inspected State Party, who has the right to make suggestions as to what information and data not related to chemical weapons should be kept within the TS due to their confidential character. The TS shall consider the suggestions and, using its own discretion, shall adopt them wherever possible. After consideration by the TS, the inspection report is final, and this final report shall be submitted not later than 30 days after the completion of the challenge inspection to the D-G for further distribution and consideration in accordance with Art. IX, par. 21-25 of the CWC (See Part X(C), par. 61).

The D-G shall transmit to the EC the assessments of the requesting and of the inspected State Party, as well as the views of the other States Parties which may be conveyed to the D-G for that purpose, and then provide them to all the States Parties (IX(21)). The EC is the organ that, in accordance with its powers and functions, shall review the final report of the inspection team as soon as it is presented. In this review process, the EC shall address concerns as to whether non-compliance has occurred; whether the request had been within the scope of the CWC; and whether the right to request a challenge inspection had been abused (IX(22)). The requesting State Party and the inspected State Party shall have the right to participate in the review of

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taken notice of the contents of the documents’ (not that there is agreement on those contents); see Part II(60).
process. The EC shall inform the States Parties and the next session of the CSP of the outcome of the review process (IX(24)).

Review with regard to assistance and protection against chemical weapons
After receiving the factual investigation report of the D-G, the EC shall meet and consider the situation. Within 48 hours after receipt, the EC must take a decision whether to instruct the TS to provide supplementary assistance to the requesting State Party (See X(10)). In the meantime, as long as the investigation by the D-G continues (i.e. as long as no ‘final investigation report’ has been forwarded to the EC), the D-G may take emergency measures of assistance, using the resources the CSP has placed at his disposal for such contingencies. The D-G may decide to do so, if the information available from the ongoing investigation or other reliable sources would give sufficient proof that there are victims of use of chemical weapons and immediate action is indispensable (X(11)). It is clear, that the D-G fulfils the reviewing (and, for that matter, assessing) tasks in this respect; it is only provided that the D-G shall keep the EC ‘informed’ of actions undertaken pursuant to Art. X(11).

4.2.3 Stage 3 of the verification process: assessment

Assessment ‘in general’
There is no general provision in the CWC that makes explicit if an official assessment regarding (the level of) compliance by a State Party is made by the OPCW. Still, the EC has a general power of considering issues or matters within its competence affecting the Convention and its implementation, including concerns regarding compliance, and cases of non-compliance (VIII(35)). In its consideration of doubts or concerns regarding compliance and cases of non-compliance, the EC shall consult with the States Parties involved and, as appropriate, request the State Party to take measures to redress the situation within a specified time. From this provision, it appears that the EC is itself capable of assessing whether a State is in non-compliance with the Convention. For only if this is the case, there is a point in the EC requesting the State Party involved to ‘redress the situation’ within a specified time. Moreover, the EC has the power to do more than simply requesting a change of behaviour: Art. VIII(36) further provides that to the extent that the EC considers further action to be necessary, it shall take, inter alia, one or more of the following measures: (a) inform all States Parties of the issue or matter; (b) bring the issue or matter to the attention of the CSP; (c) make recommendations to the

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655 These considerations not only relate to issues of non-compliance with the Convention; also potential abuse of the rights provided to a State Party under the Convention may be part of this consideration (VIII(36)).
CSP regarding measures to redress the situation and to ensure compliance. This means that the EC may bring the issue or matter into the hands of the CSP, or may wish to rely on a reaction of the other States Parties by informing them of the issue or matter. Possible reactions by the CSP can be found in Art. XII, but it is not entirely clear whether the CSP could make an express statement that a violation of the CWC has occurred (Perhaps it could do so on the general basis of Art. VIII(19)). Actions by the other States Parties may in case they are collective, be based on a recommendation of the CSP (Art. XII(3)); in case of unilateral actions the treaty-based supervisory mechanism is left and the ‘sphere’ of remedies available under general international law is entered (See infra, chapter [7]).

Finally, in cases of particular gravity and urgency, the EC may also decide to bring the issue or matter directly to the attention of the UNGA and the UNSC. It shall at the same time inform all States Parties of this step (VIII(36)). Since the CSP has a similar power to bring matters to the UNGA and UNSC, viz. in cases of ‘particular gravity’ (XII(4)), value must be attached to the qualification ‘urgency’: apparently, it is expected that the EC given its limited number of 41 members and its regular decision-making by qualified majority, may be able to decide on referring the issue or matter to the UN more expeditiously than the CSP.

Assessment after a ‘routine’ inspection
Not later than 10 days after the inspection, the inspectors shall prepare a factual, final report on the activities conducted by them and on their findings. It shall only contain facts relevant to compliance with the CWC, as provided for under the inspection mandate. The report shall also provide information as to the manner in which the State Party inspected co-operated with the inspection team. The report shall be kept confidential (See Part II, par. 62). From these wordings, it appears that the inspection team does not make an assessment as to compliance with the Convention by the inspected State Party; it can be assumed the report shall contain only the facts that are relevant for the appropriate body to make a determination as to compliance.657 This assumption is supported by the provisions of Conf. Annex C(17), according to which the report to be prepared after each inspection shall only contain facts relevant to compliance with the CWC.

The final report shall immediately be submitted to the inspected State Party that may make written comments on the factual findings. Within 30 days after inspection, the inspected State Party shall submit the report to the D-G (Part II, par. 63). Should the report contain uncertainties, the D-G shall

657 Marauhn (1998), p. 241, speaks in this respect of a ‘factual’ evaluation, which is described as ‘the way in which decisions as to whether certain facts exist or do not exist are taken’. Since the inspection report also includes the results of the laboratory analysis of samples as compiled by the TS relevant to compliance with the CWC (See Part II, par. 58), the facts in the report may however provide rather compelling evidence of non-compliance.
approach the State Party for clarification. (Part II, par. 64). If the uncertainties cannot be removed or the facts established are of a nature to suggest that obligations undertaken under the CWC have not been met, the D-G shall inform the EC without delay (Part II, par. 65). In connection with the foregoing, this provision is somewhat remarkable: it seems that an implicit assessment regarding (non-) compliance is made after all. Still, as mentioned the right to make an explicit assessment regarding compliance appears in this case to be reserved to the EC.

Assessment after a challenge inspection

It is noticeable, that the detailed information relating to the concerns regarding possible non-compliance, which has triggered the challenge inspection, is annexed to the final inspection report as an Appendix, which shall be retained within the TS under appropriate safeguards to protect sensitive information (Part X(C), par. 59). This provision implies that the ‘final report’ that is distributed by the D-G to all States Parties and the EC pursuant to Art. X(21), does not contain this Appendix. All States Parties, except for the inspected State Party itself, therefore have to base their opinions on the ‘factual findings’ of the final report (Art. IX(21)), without having access to the additional detailed information in the Appendix regarding the compliance concerns.

Like in the review stage after a challenge inspection, the EC is the organ that is central to the stage of assessment in the verification process based on such inspection. If after the review of the final inspection report, the EC reaches the conclusion that further action may be necessary, it shall take the appropriate measures to redress the situation and to ensure compliance with the CWC, including specific recommendations to the CSP (IX(23)).

Logically, the EC can use its powers under Art. VIII(36) also in this respect. In case the EC has made such recommendations, the CSP shall consider action in accordance with Art. XII, on ‘measures to redress a situation and to ensure compliance, including sanctions’ (IX(25)). This means, that the provisions on correction/enforcement are applicable to the case. The direct reference to the measures of correction/enforcement suggests that no ‘bargaining for the truth’ is possible after the final inspection report; the EC shall make the assessment whether any non-

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658 Pursuant to par. 61 of the Verification Annex, Part X(C), the inspected State Party has the opportunity to comment on the draft final report before it is sent by the TS to the D-G.

659 The text does not elaborate on how the EC shall present the results of its consideration of the report, and turns directly to the follow-up measures. In fact, the ‘conclusion’ of the EC comes down to an assessment regarding compliance made by the Organisation. Note that pursuant to Art. IX(21) all States Parties, in the first place the requesting and the inspected State Party, have the right to provide their views and make their own assessments regarding compliance and convey those to the D-G.

compliance has occurred, and the States Parties directly involved are not able to challenge either factual findings in the inspection report or construction of rules (if any) by the EC in the stage of review.

Assessment with regard to assistance and protection against chemical weapons
The EC has the power to decide by simple majority on whether to instruct the TS to provide supplementary assistance in cases of (alleged) threat or use of chemical weapons. When so decided by the EC, the D-G shall immediately provide assistance and for this purpose may co-operate with States Parties and relevant international organisations. The States Parties shall make the fullest possible efforts to provide assistance. As mentioned earlier, the D-G has the power to decide on immediate emergency action as long as his investigation is ongoing.

The procedure regarding assistance and protection seems to be decoupled from the question whether the CWC has been not complied with; the dominant role of the D-G and the decision modality of the EC provide sufficient indication for this conclusion. It is most logical, that after an appeal of use or threat of use has been made, the State Party allegedly being the victim shall be granted all possible support by the OPCW in order to contain and limit the consequences of the use of chemical weapons as much as possible. Even though the assessment in this procedure will not have direct bearing on decisions regarding issues of non-compliance by States Parties, the establishment of a need for assistance may of course indicate that chemical weapons have been used contrary to the obligations of Art. I CWC. In the final report drawn up after investigation of alleged use, at least all information in the course of the investigation taken that might serve to identify the origin of any chemical weapons used, shall be included in the report (Part XI(D), par. 26).

4.3 Provisions on dispute settlement in the CWC

Apart from the 'dispute settlement look-a-like' procedure of consultation and co-operation in the process of verification (See Art. IX(2)), provisions for the settlement of disputes have been centralised in Art. XIV. Even though the provisions on dispute settlement have to be read in conjunction with the procedures on verification, they are much less elaborate and detailed than the phase of verification. This has been explained by reference to the fact that the CWC lays emphasis on conflict avoidance and prevention.

66 In that connection, it is provided that the TS shall transmit the investigation report of the D-G and the decision taken by the EC to the States Parties and to the relevant international organisations (X(10)).
rather than settlement. Disputes that may arise concerning the application or the interpretation of the CWC shall be settled in accordance with the relevant provisions of the CWC and in conformity with the provisions of the UN Charter (XIV(1)). When a dispute arises between two or more States Parties, or between one or more States Parties and the OPCW, relating to the interpretation or application of the CWC, the Parties concerned shall consult together with a view to the expeditious settlement of the dispute by negotiation or by other peaceful means of the Parties’ choice, including recourse to appropriate organs of the CWC and, by mutual consent, referral to the ICJ in conformity with the Statute of the Court (XIV(2)). Consultation between the parties to the dispute is the method to be tried first, in order to reach agreement on the method of non-judicial dispute settlement that is going to be used for the purpose of settling the dispute.

The parties to the dispute are clearly not obliged to have recourse to the organs of the OPCW, albeit that these organs may easily get involved in the procedure, as appears from par. 3 and 4 of Art. XIV. The EC may contribute to the settlement of a dispute by whatever means it deems appropriate, including offering its good offices, calling upon the parties to the dispute to start the settlement process of their choice and recommending a time-limit for any agreed procedure (XIV(3)). The powers of the EC in this respect resemble those of the UNSC under Chapter VI, especially Art. 33(2), of the UN Charter. Contrary to the EC, the CSP does not seem to have a right of initiative but must wait for action by the Parties to the dispute or the EC. However, the CSP is explicitly empowered to establish subsidiary organs as it finds necessary for the purpose of dispute settlement (XIV(4)); such organ could e.g. be established as a conciliation commission.

It is noticeable, that in case of disputes between one or more States Parties and the Organisation, the role of the EC and the CSP in dispute settlement seems rather odd: it could be explained as if these organs were allowed to be the judge in their own case. But, it can be expected that in practice hardly any disputes, relating to the application or interpretation of the treaty, between the OPCW and one or more States Parties will come up that have not already been raised and dealt with in the context of verification or

663 Also when the parties to the dispute decide not to have recourse to the organs of the OPCW, at least they shall keep the EC informed of actions being taken (Art. XII(2)). This obviously is so because it is in the interest of the OPCW to be informed about such conflicts, see Kurzidem (1998), p. 302.
664 It can be upheld that any ‘judgements’ made by such dispute settling body cannot bind the Parties to the dispute without their express consent. Nothing in the CWC empowers the CSP to assume the function of a judicial dispute settling body and hence the CSP could not transfer any such functional power to a subsidiary organ (Art. VIII(21(f)) empowers the CSP to establish such subsidiary organs as if finds necessary ‘for the exercise of its functions in accordance with the CWC’). See also Krutzsch & Trapp (1994), p. 236-237.
correction/enforcement. Moreover, Art. XIV in fact leaves sufficient discretionary powers to the States Parties in their choice of settling disputes, even those disputes that arise between one or more States Parties and the OPCW. The applicability of Art. XIV to a dispute therefore does not bring along much obligatory prescriptions as regards the behaviour of the Parties to the dispute. It may furthermore be recalled that pursuant to par. 23 of the Confidentiality Annex, a 'Commission for the settlement of disputes related to confidentiality' has been set up as a subsidiary organ of the CSP. This Commission shall consider cases of breaches of confidentiality involving both a State Party and the OPCW, which are the kind of disputes most likely to arise in practice between the States Parties and the OPCW.

A (non-binding) 'final say' on (abstract) legal questions by a judicial organ external to the treaty is available, in that both the EC and the CSP are separately empowered, subject to the authorisation of the UNGA, to request the ICJ to give an advisory opinion on any legal question arising within the scope of the activities of the OPCW (XIV(5)). Finally, Art. XIV(6) has the effect that the provisions on verification (including the right to request a challenge inspection) and measures of correction/enforcement shall not be affected by the procedures on dispute settlement.

4.4 Provisions on correction/enforcement in the CWC

An internal sanction can be applied to States Parties that do not fulfil their obligation to pay their contribution (VIII(7)). A member of the OPCW that is in arrears in the payment of its financial contribution to the Organisation shall have no vote in the Organisation if the amount of its arrears equals or exceeds the amount of the contribution due from it for the preceding two full years. The CSP, as the 'plenary' organ of the OPCW, may, nevertheless, permit such a member to vote if it is satisfied that the failure to pay is due to conditions beyond the control of the member (VIII(8)).

Art. VIII(21(k)) provides that the CSP shall take the necessary measures to ensure compliance with the Convention and to redress and remedy any situation which contravenes the provisions of the CWC, in accordance with Art. XII ('Measures to redress a situation and to ensure compliance, including sanctions'). In considering action, the CSP shall take into account all information and recommendations on the issues submitted by the EC.

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665 It is not altogether clear whether this provision brings along that in each separate case an authorisation from the UNGA to request an advisory opinion is required. See Myjer (1997), p. 363.

666 Cf. Krutzsch & Trapp (1994), p. 232-233. Art. XIV(6) reads: "This article is without prejudice to Art. IX or to the provisions on measures to redress a situation and to ensure compliance, including sanctions".

667 The EC may bring the issue or matter to the attention of the CSP or make
Art. XII, then, establishes the right of the CSP to take the necessary measures, (limited to those arranged for in par. 2 to 4 of Art. XII), to ensure compliance and to redress and remedy any situation which contravenes the provisions of the CWC. Note, that the legal basis for the correction of deviant behaviour thus provided is not coupled with a ‘breach’ or ‘violation’ but broadly to ‘any situation that contravenes the provisions of the Convention’. This circumscription was used to escape the impasse resulting from the disagreement in the negotiations on the question as to whether the CSP should be able to establish a violation of an obligation by a State Party.668 The wording as it is does not require a formal assessment.

Art. XII(2) relates to an ‘internal’ sanction that has earlier been identified as a potentially highly effective one, viz. the loss of rights and privileges by the State Party under the Convention. It is provided that in cases where a State Party has been requested by the EC to take measures to redress a situation raising problems with regard to its compliance, and where the State Party fails to fulfil the request within a specified time, the CSP may, *inter alia*, upon the recommendation of the EC, restrict or suspend the State Party’s rights and privileges under the Convention until it undertakes the necessary action to conform with its obligations under the CWC.669 The most important ‘rights’ that might be suspended are presumably those related to trade in scheduled chemicals, albeit that one may also think of other rights to participate in economic and technological development (Art. XI) and the right to assistance and protection against chemical weapons (Art. X).670 In cases where serious damage to the object and purpose of the Convention may result from activities prohibited under the CWC, in particular by Art. I, the CSP may recommend collective measures to States Parties in conformity with international law (Art. XII(3)). This - at first sight clear - paragraph has

recommendations to the CSP regarding measures to redress the situation and to ensure compliance (VIII(36)(b) and (c)). This connection between Art. XII and VIII also implies that before referring the matter to the CSP, the EC shall first try to negotiate a settlement on the basis of Art. VIII(36), see Krutzsch & Trapp (1994), p. 221.


669 Note, that the right of the CSP to impose ‘internal’ sanctions is by no means restricted by Art. XII(2), given the use of the wordings ‘*inter alia*’. Furthermore, it seems highly unlikely that the CSP would be dependent on an initial recommendation by the EC before it could undertake action pursuant to par. 2 of Art. XII. Besides the argument of the hierarchy within the OPCW (the CSP is the ‘principal’ organ according to Art. VIII(19) and the EC is responsible to the CSP according to Art. VIII(30)) and the fact that the act of the EC involved is a non-binding recommendation, there is the wording of par. 1 of Art. XII, which grants a general power to the CSP to ‘take the necessary measures to ensure compliance’, with the only addition that it is to take into account the information and the recommendations submitted by the EC when the CSP is *considering* action (not: “before action can be undertaken" or similar wordings). Krutzsch & Trapp (1994), p. 222-223, however, argue that the CSP may diverge from the recommendations of the EC but that it may not take such measures without the EC making a recommendation to that effect.

a lot of implications. First of all, it deals with grave cases, taking into account the requirement of ‘serious damage’ to the ‘object and purpose’ of the Convention (even worse cases, i.e. those of ‘particular gravity’, are dealt with in par. 4). What exactly is part of the object and purpose of the Convention is not altogether clear; at least in particular the substantive obligations of Art. I of the CWC are part of it. Furthermore, the CSP is by no means obliged to take action: it ‘may recommend’ collective measures. The use of the wording ‘recommend’ makes clear that the States Parties in their turn are not obliged to follow the recommendation of the CSP. Finally, what does the notion ‘collective measures in conformity with international law’ entail? Since Art. XII(4) already relates to potential activities of organs of the UN, the ‘collective measures’ referred to in par. 3 probably relate to collective actions in the sphere of countermeasures and collective self-defence.

The final paragraph of Art. XII contains the well-known formula that explicitly allows for the calling in of the appropriate bodies of the UN. The CSP shall, in cases of particular gravity, bring the issue, including relevant information and conclusions, to the attention of the UNGA and the UNSC (Art. XII(4)). Both the UNGA and the UNSC must (‘shall’) be informed by the CSP at the same time in case of particular gravity. In cases that are characterised not only by particular gravity but also by urgency, the EC has been granted the power to bring the issue or matter, including relevant information and conclusions, directly to the attention of the UNGA and the UNSC (VIII(36)).

4.5 The interpretative element in the CWC

Art. VIII(22) prescribes that a conference for the purpose of reviewing the operation of the CWC shall be convened by the CSP, not later than one year after the expiry of the fifth and the tenth year after the entry into force of the Convention (and at such other times within that time period as may be decided upon). At the first of these sessions, *inter alia* the provisions of Art.

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671 The ‘object and purpose’ of the Convention is not confined to the obligations mentioned in Art. I. For example, clear violations of the verification regime or marked failure to adopt the national implementation measures (such as export controls) required by Art. VII could also lead to ‘serious damage to the object and purpose’ of the CWC. See Rosas (1998), p. 439.

672 In an Australian Draft for a CWC of 12 March 1992 (CD/1143, p. 31) the words ‘including sanctions’ had also been inserted in par. 3, as an illustration of the ‘collective measures’ that the CSP may recommend States Parties to undertake. The fact that this addition does not appear in the final text may indicate that the ‘collective measures’ were not conceived as sanctions in the sense of collective measures used by international organisations, such as the UNSC, but instead as something in the grey zone between sanctions and countermeasures. See Rosas (1998), p. 425, 435 and 440.
VI and Parts VII to IX of the Verification Annex will be re-examined by the CSP in the light of a comprehensive review of the overall verification regime for the chemical industry. The CSP shall make recommendations so as to improve the effectiveness of the regime (See Part IX(c), par. 26). At intervals of five years thereafter, unless otherwise decided upon, further sessions of the CSP shall be convened with the same objective. Such reviews shall take into account any relevant scientific and technological developments. In order to maintain or restore the effectiveness of the Convention, the Review Conference will unavoidably have to go into the interpretation and clarification of some of the treaty provisions.

Furthermore, any State Party may propose ‘changes’ to the Annexes of the CWC (XV(1)). In order to ensure the viability and the effectiveness of the Convention, the provisions in the Annexes (except for some parts, relating to confidentiality and to challenge inspections, that have been excluded) are subject to a relatively simple ‘amendment’ procedure (See Art. XV(5) as compared to Art. XV(2, 3)). The applicable provisions indicate that the adaptation of existing technical norms (primarily to the demands of scientific development) and the drawing up of new ones is relatively uncomplicated.\(^{673}\) Finally, much of the potential need for interpretation has been obviated by Art. II, which contains various definitions and criteria that are specific to the CWC; the definitions are therefore valid ‘for the purpose of the CWC’. In addition, in Part I of the Verification Annex, another set of definitions, mainly connected to the operation of on-site inspections, has been provided. And, the organs of the OPCW have issued a considerable number of understandings and decisions on the interpretation and clarification of specific treaty provisions.\(^{674}\)

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\(^{673}\) The D-G shall evaluate proposals of the States Parties to change provisions of the Annexes (XV(5(b))). If the EC thereupon recommends to all States Parties that the proposed changes be adopted, it shall be considered approved if no State Party objects within 90 days after receipt of the recommendation (XV (5(d))). In contrast, amendments to the Convention shall only be adopted in an Amendment Conference by a positive vote of a majority of all States Parties with no State Party casting a negative vote; and ratified or accepted by all those States Parties casting a positive vote at the Amendment Conference (XV (3)).

\(^{674}\) See the list of decisions and understandings in Tabassi (1999), p. 117-207.
II. The IAEA safeguards system and the NPT

1. A brief note on history

1.1 The failure to outlaw nuclear weapons
After the use of nuclear weapons by the US against Japan in 1945, the fear that they might be used again prompted the UNGA to establish (by its very first resolution) a UN Atomic Energy Commission. At its first meeting, the US delegate on the Commission, B. Baruch, made a proposal which later came to be known as the Baruch Plan. According to this plan, an organisation (the ‘International Atomic Development Authority’) would be entrusted with the control of atomic energy in all its phases of development, starting with the raw material. In the Baruch Plan, the control of nuclear weapons had priority; nuclear disarmament would only follow once an adequate system for the control of atomic energy, including the renunciation of the nuclear bomb, had been put into effective operation and sanctions against possible violators had been agreed on.675 The SU reacted with a plan of its own (the Gromyko Plan), which reversed the priorities and proposed the production, storage and use of nuclear weapons to be prohibited and all nuclear weapons to be destroyed within three months, while a control system, headed by an ‘International Control Commission’ within the framework of the UNSC, was to be established afterwards. It was likely that the SU knew this plan was not acceptable and that it used it largely as an arguing position during the period when it was developing its own nuclear weapons.676 Deadlock was the result of this difference of opinion between the superpowers whether to abolish nuclear weapons before an effective international control system was established, or instead thereafter. The situation was further complicated after the coupling of the negotiations on nuclear weapons control with those on the control of conventional weapons, since the US was largely superior in nuclear arms technology whereas the SU was by far superior in the conventional field.677 Even though the UNGA approved the Baruch Plan in 1948678 on the instigation of the US, it was the US itself that left the plan several years later, when it made all its substantive positions regarding arms limitation dependent on the outcome of the study of inspection methods and control arrangements.

678 As the ‘UN Plan to Control Atomic Energy’; see UNGA/Res/191 (III), 4 November 1948.
1.2 Atoms for Peace and beyond

In 1953, US President Eisenhower delivered his famous 'Atoms for Peace' Proposal in the UNGA.\(^{679}\) The idea behind this proposal was to promote disarmament by diminishing the potential destructive power of the nuclear stockpiles in the world and by building up the peaceful uses of nuclear energy. The nuclear powers were to contribute fissile material for such uses to an agency which would be set up under the aegis of the UN and which would assist States in obtaining the benefits of atomic energy. This proposal led to the establishment of the IAEA. With the attempts to outlaw nuclear weapons having failed, international attention thus focused on horizontal proliferation - the prevention of the spread of nuclear weapons to additional States.

The IAEA safeguards system was originally developed in the early 1960s, as a central component of the commitment to control the spread of nuclear weapons by ensuring that nuclear material would not be used in such a way as to further any military purpose.\(^{680}\) Since the entry into force of the NPT in 1970, the system has enjoyed worldwide application not only with regard to the NPT but also the NWFZ Treaties, which require the acceptance of safeguards by the States Parties. The legal obligation to submit to Agency safeguards is furthermore found in other agreements, such as bilateral agreements between nuclear suppliers and recipients. Today, the non-proliferation regime with regard to nuclear weapons is one of the main 'pillars' of the law of arms control. The NPT is now, after the UN Charter, one of the treaties most widely adhered to, comprising some 187 States Parties, whereas the IAEA has about 130 member States, most of which have concluded a safeguards agreement with the IAEA.

Distinct from the supervisory mechanism of the CWC and the CTBT, the IAEA safeguards system was itself set up not by treaty, but by way of bilateral Agreements between the IAEA and individual States, these Agreements being modelled and based on decisions of the IAEA itself. Because of this structure, focus will be first on the IAEA as an autonomous organisation, and next on the safeguards system as a supervisory mechanism.


2. The IAEA

2.1 Objectives and functions
The IAEA (or Agency) is the international organisation, located in Vienna, which is responsible for the operating and functioning of the safeguards-system. Its institutional structure has been arranged by a Statute, which was approved on 23 October, 1956 and came into force on 29 July 1957.\textsuperscript{681} The Statute describes as the objectives of the IAEA that it shall seek to accelerate and enlarge the contribution of atomic energy to peace, health and prosperity throughout the world, and that it shall ensure, so far as it is able, that assistance provided by it or at its request or under its supervision or control is not used in such a way as to further any military purpose (Art. II). In Art. III\(1\)(A), the important function of the IAEA relating to the safeguards mechanism has been laid down; the Agency is authorised to establish and administer safeguards and to apply them on request.\textsuperscript{682} The IAEA uses nuclear material accounting to establish the quantities of nuclear material present in a State and the changes that take place in that inventory. In carrying out its functions, the IAEA shall establish control over the use of special fissionable materials it received, in order to ensure that these materials are used only for peaceful purposes (Art. III\(1\)(B)). The IAEA maintains relations with the UN by submitting annual reports on its activities to the UNGA and, when appropriate, by reporting to the UNSC (Art. III\(1\)(B)). The Agency is based on the principle of the sovereign equality of all its members, and shall carry out its activities with due observance of the sovereign rights of States (see Art. IV\(2\)(C); III\(2\)(D)).

2.2 Institutional structure of the IAEA
Even though the IAEA was not established as a specialised organisation for the purpose of supervising the NPT, it has assumed that very role with the IAEA-NPT safeguards system. The organs of the IAEA all have a (smaller or larger) task in the functioning of the safeguards-system. The Agency has three organs: a General Conference, a Board of Governors, and a Staff, headed by a Director General (D-G). The members of the IAEA are those States which have deposited an instrument of acceptance of the IAEA Statute after their membership has been approved by the General Conference upon recommendation of the Board of Governors (Art. IV\(1\)(B)).

\textsuperscript{681} See ‘Statute of the International Atomic Energy Agency’, as amended up to 28 December 1989, IAEA, Vienna.

\textsuperscript{682} “The IAEA is authorised to establish and administer safeguards designed to ensure that special fissionable and other materials, services, equipment, facilities, and information made available by the Agency or at its request or under its supervision or control are not used in such a way as to further any military purpose; and to apply safeguards at the request of the parties, to any bilateral or multilateral arrangement, or at the request of a State, to any of that State’s activities in the field of atomic energy”. 

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As compared to the institutional structure of the OPCW and the CTBTO, the institutional structure of the IAEA has been simply and conveniently arranged.

2.2.1 General Conference
The General Conference of the IAEA is composed of the representatives of all member States of the IAEA; there is one delegate per member State (Art. V(A), (B)). The General Conference may initiate general and broadly formulated activities, as is common for plenary organs. It may discuss any questions or any matters within the scope of the IAEA Statute or relating to the powers and functions of any organs provided for in the Statute, and may make recommendations to the individual members or to the Board of Governors or to both on any such questions or matters (Art. V(D)). The General Conference shall meet annually and may, at request, meet in special sessions (Art. V(A)). Each member shall have one vote, and a majority of members shall constitute a quorum. The General Conference shall make decisions by a majority of the members present and voting; decisions made pursuant to some specified paragraphs (relating to finance, amendments and internal sanctions) shall be made by a two-third majority (see Art. V(C)). The General Conference shall have the authority to take decisions on any matter specifically referred to it for this purpose by the Board, and to propose matters for consideration by the Board and request from the Board reports on any matter relating to the functions of the Agency (Art. V(F)).

2.2.2 Board of Governors
The Board of Governors is the executive body of the Agency: it shall have authority to carry out the functions of the Agency in accordance with the Statute subject to its responsibilities to the General Conference as provided in the Statute (Art. VI (F)).\footnote{The Board shall be composed of ten members designated by the outgoing Board of Governors, and twenty members elected by the General Conference. The criterion used in the designation of new members on the Board by the outgoing Board is in their being most advanced in the technology of atomic energy including the production of source materials (Art. VI(A(1)), and in that the election by the General Conference shall take place on the basis of equitable geographical distribution of new members (Art. VI(A(2)). The Board shall meet at such times as it may determine (Art. VI(G)); there are no regular or fixed meetings.\footnote{Each member of the Board shall have one vote, and two-thirds}}

\footnote{One of those responsibilities is the preparation of an annual report to the General Conference concerning the affairs of the Agency and any projects approved by the Agency, as well as the submission of reports to the General Conference as the Agency is or may be required to make to the UN or to any other organisation the work of which is related to that of the Agency (Art. VI (J)).}

\footnote{Although it is provided that the Board of Governors shall hold office for the time-period}
of all members shall constitute a quorum. Decisions shall be made by a majority of those present and voting, except for decisions on the amount of the Agency's budget which shall be made by a two-third majority (Art. VI(E)). The Board of Governors may establish such committees as it deems advisable (Art. VI(I)).

2.2.3 Secretariat

The Staff of the Agency shall be headed by a Director General (D-G), who is the chief administrative officer of the Agency (Art. VII(A)). The D-G shall be responsible for the appointment, organisation, and functioning of the Staff and shall be under the authority of and subject to the control of the Board of Governors (Art. VII(B)). The Agency shall be guided by the principle that its permanent staff shall be kept to a minimum (Art. VII(C)-(E)). The Board of Governors to a large extent regulates the activities and functioning of both the Staff and the D-G (See Art. VII(B) and (E)). The Staff and the D-G are independent actors that shall not seek or receive instructions from any source external to the Agency. The international character of the responsibilities of the D-G and the Staff shall be respected by the members. For their part, the D-G and the Staff are not to disclose any industrial secret or other confidential information coming to their knowledge by reason of their official duties for the Agency (See Art. VII(F)).

3. Safeguards as a supervisory mechanism

3.1 General aspects of the safeguards system

INFCIRC/153

Supervision of compliance with the non-proliferation obligations of States Parties is through the use of safeguards administered by the IAEA. The system of safeguards has at its roots the desire of States to guarantee that cooperative nuclear energy development is not furthering military purposes. It has to evidence this political goal by way of a system of technical measures, between two regular annual sessions of the General Conference (Art. VI (C) and (D)). See also Rules 11-13 of the ‘Provisional Rules of Procedure of the Board of Governors’, as amended up to 23 February 1989 (electronic version).

It should be noted, that the term ‘Secretariat’ is not used in the Statute of the IAEA. Instead the Statute uses the term ‘Staff’ (headed by the D-G). However, in the ‘Provisional Rules of Procedure of the Board of Governors’ there is reference to ‘The Secretariat’ (part III) which can be considered the technical unit comprising the Staff and the D-G.

The D-G shall be appointed by the Board of Governors with the approval of the General Conference for a term of four years (Art. VII(A)). This arrangement assures that the person of the D-G will be acceptable to all members of the IAEA.

See also Rules 8-10 of the ‘Provisional Rules of Procedure of the Board of Governors’, as amended up to 23 February 1989 (electronic version).
striking a balance between quantitative and other objective technical facts and the required political goal. Safeguards are designed to verify statements regarding the presence, amounts and use of nuclear material or other items subject to safeguards as recorded by facility operators and as reported by the member State to the Agency. The application of safeguards in accordance with the applicable arms control treaties is conducted on the basis of specific Safeguards Agreements negotiated between the Agency and the individual State on the basis of the framework for the conclusion of such agreements between the Agency and Member States established by the Agency’s Statute and other relevant legal instruments. In INFCIRC/153, of 1971, there has been laid down the structure and content of agreements between the Agency and NNWS required in connection with the NPT.688 The agreements based on INFCIRC/153 are also known as ‘full scope’ Safeguards Agreements, since they extend to all peaceful nuclear activities and materials in the State concerned. Outside the scope of INFCIRC/153, between the IAEA and individual NWS, so-called voluntary offer-agreements have been concluded.689 In 1997, a ‘Model Additional Protocol’ has been accepted, in order to strengthen the IAEA safeguards system (see infra). Due to the fact that each member of the IAEA shall have to conclude a separate bilateral agreement endorsing this Model Additional Protocol, the relationship between the IAEA and most of its members will continue to be governed by the provisions of the agreements based on INFCIRC/153 for some time to come.

The material reproduced in INFCIRC/153 is used as the basis for negotiating Safeguards Agreements between the Agency and NNWS parties to the NPT. Practically all safeguards agreements track the language of INFCIRC/153 virtually word for word.690 INFCIRC/153 is divided into three parts: part I deals primarily with ‘substantive’ provisions, part II deals mainly with ‘institutional’ provisions, and the third part contains definitions. Apart from this general framework, each NNWS Party to the NPT has to make Subsidiary Arrangements with the Agency, in which it shall be specified in detail how the procedures laid down in the Agreement are to be applied (see par. 39 of INFCIRC/153). It should be recalled that, although there is a strong connection between the NPT and the IAEA Safeguards system, the safeguards only have a limited role under that treaty. The

688 See ‘The Structure and Content of Agreements between the Agency and States Required in Connection with the Treaty on the Non-Proliferation of Nuclear Weapons’, IAEA doc. INFCIRC/153, May 1971. In a corrected version, the document was re-issued in June 1972 as INFCIRC/153(Corr.).

689 In voluntary-offer agreements IAEA safeguards are applied to a limited number of facilities selected by the Agency. This safeguards system with the NWS shall not be dealt with here.

safeguards aim at verification of the declared nuclear fuel cycle and are not meant to counter e.g., smuggling or purchase of parts of nuclear weapons by NNWS, activities that are clearly prohibited under Art. II of the NPT. Before the supervisory mechanism of the IAEA for the purpose of safeguarding nuclear material will be examined in detail, various important general aspects of the system will first be discussed, most of which are found in the so-called ‘miscellaneous provisions’ of INFCIRC/153.

Basic undertakings
The Agreement between the State and the Agency should contain, in accordance with Art. III(1) of the NPT, an undertaking by the State to accept safeguards, in accordance with the terms of the Agreement, on all source or special fissionable material in all peaceful nuclear activities within its territory, under its jurisdiction or carried out under its control anywhere, for the exclusive purpose of verifying that such material is not diverted to nuclear weapons or other nuclear explosive devices (par. 1 of INFCIRC/153)). Vice versa, the Agreement should provide for the Agency’s right and obligation to ensure that safeguards will be applied, in accordance with the terms of the Agreement, on all source or special fissionable material in all peaceful nuclear activities within the territory of the State, under its jurisdiction or carried out under its control anywhere, for the exclusive purpose of verifying that such material is not diverted to nuclear weapons or other nuclear explosive devices (par. 2). Clearly, the central purpose of the safeguards system is to deal with non-diversion of nuclear material, the risk of diversion being a problem that is characteristic to the control of any weapon of mass destruction, viz. the fact that the materials required to make those weapons are not prohibited as long as they are used for peaceful purposes (cf. use of nuclear material in order to generate energy, application of chemicals in health care, use of biological agents in agriculture). It has been argued that since safeguards are required on ‘all’ material in ‘all’ peaceful activities, the IAEA should also routinely verify non-concealment of undeclared nuclear material.691 This interpretation however does not find support in the provisions of INFCIRC/153 and has instead been recognised as a (potential) shortcoming of the system, which to some extent will be remedied by the Model Additional Protocol (see infra). The Agreement should finally provide that the Agency and the State shall co-operate to facilitate the implementation of the safeguards provided for therein (par. 3).

Effective control versus undue interference
The paragraph on the implementation of safeguards demonstrates, like the provision on non-diversion, the tension between the need for effective

control on the one hand and the avoidance of undue interference with the interests of the State on the other hand.\textsuperscript{692} The Agreement should provide that in implementing safeguards pursuant thereto the Agency shall make every effort to ensure optimum cost-effectiveness, e.g. by making use of such means as containment, statistical techniques and random sampling in evaluating the flow of nuclear material and concentration of verification procedures on those stages in the nuclear fuel cycle involving the production, processing, use or storage of nuclear material from which nuclear weapons or other nuclear explosive devices could readily be made, and minimizing verification procedures in respect of other nuclear material, on condition that this does not hamper the Agency in applying safeguards under the Agreement (par. 6). Especially with regard to the performance of inspections by the Agency and the access linked to those inspections to sites and facilities in the State territory, the tension between effective control and undue interference is manifest.

Starting point of safeguards

Safeguards apply to the nuclear material which has reached a certain stage in the nuclear fuel cycle present in a NNWS. Pursuant to par. 34(c), when any nuclear material of a composition and purity suitable for fuel fabrication or for being isotopically enriched leaves the plant or the process stage in which it has been produced, or when such nuclear material, or any other nuclear material produced at a later stage in the nuclear fuel cycle, is imported into the State, the nuclear material shall become subject to the safeguards procedures specified in the Agreement. Nuclear material means any ‘source material’ or any ‘special fissionable material’ as defined in Art. XX of the Statute of the IAEA. ‘Special fissionable material’ as defined in Art. XX(1) of the Statute encompasses plutonium-239; uranium-233; uranium enriched in the isotopes 235 or 233,\textsuperscript{693} and any material containing one or more of the foregoing. ‘Source material’ means uranium containing the mixture of isotopes occurring in nature; uranium depleted in the isotope 235; thorium; and any of the foregoing in the form of metal, alloy, chemical compound or concentrate (Art. XX(3)). The Board of Governors of the IAEA shall ‘from time to time determine’ what other material is considered to be ‘special fissionable material’ or ‘source material’, but any such determination shall have effect under the Agreement only upon agreement by the State (See par. 112). The starting-point of safeguards is therefore dependent on three elements:

\textsuperscript{692} See par. 4-6. The Agreement should, for example, provide that the Agency shall take every precaution to protect commercial and industrial secrets and other confidential information coming to its knowledge in the implementation of the Agreement (See par. 5).

\textsuperscript{693} This has been defined as “uranium containing the isotopes 235 or 233 or both in an amount such that the abundance ratio of the sum of these isotopes to the isotope 238 is greater than the ratio of the isotope 235 to the isotope 238 occurring in nature” (Art. XX(2) Statute).
1) nuclear material
2) which has reached the stage in the nuclear fuel cycle which makes it suitable for fuel fabrication or for being isotopically enriched (or which is produced at even a later stage in the nuclear fuel cycle) and
3) which leaves the plant or the process stage in which it has been produced or which is imported into the State, shall become subject to safeguards procedures.

When any material containing uranium or thorium which has not reached the stage in the nuclear fuel cycle described above is exported to a NNWS, the State shall inform the Agency of its quantity, composition and destination, unless the material is exported for specifically non-nuclear purposes (par. 34(a)). Similarly and with the same reservation, when such material is imported, the importing State shall inform the Agency of its quantity and composition (par. 34(b)). In these cases, the material does not become subject to the safeguards procedures. Finally, pursuant to par. 33 safeguards shall not apply to material in mining and ore processing activities.

**Non-application of safeguards**

Since the safeguards apply to nuclear material which is to be used in peaceful activities, in order to verify that no diversion to nuclear weapons will take place, a paradoxical situation can occur in which a State intends to exercise its discretion to use nuclear material, which is required to be safeguarded under the Agreement between the Agency and itself, in a nuclear activity which does not require the application of safeguards under the Agreement. In that case, the State shall inform the Agency of the activity, making it clear that the use of the nuclear material in a non-proscribed military activity will not be in conflict with an undertaking the State may have given and in respect of which Agency safeguards apply, that the nuclear material will be used only in a peaceful nuclear activity; and that during the period of non-application of safeguards the nuclear material will not be used for the production of nuclear weapons or other nuclear explosive devices (See par. 14(a)). The State and the Agency shall make an arrangement so that, only while the nuclear material is in such an activity, the safeguards provided for in the Agreement will not be applied (See par. 14(b)). Each arrangement shall be made in agreement with the Agency, whose agreement shall relate only to institutional provisions, but shall not involve any approval or classified knowledge of the military activity or relate to the use of the nuclear material therein (See par. 14(c)). It is clear from these wordings that the Agency’s ‘agreement’ has no absolving

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694 An example of such ‘non-proscribed military use’ of nuclear material is in the nuclear reactor of a submarine. See Harry (1995), p. 201.

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consequences whatsoever for the responsibilities of the State regarding its activities with its nuclear material.

**Exemptions from safeguards**
The Agreement should provide that the Agency shall, at the request of the State, exempt specifically described nuclear material from safeguards, either because of their small quantities, their isotopic concentration or their use in non-nuclear activities (See par. 36). There is no quantitative limitation to these exemptions. Pursuant to par. 37, the Agreement should also provide that nuclear material that would otherwise be subject to safeguards shall be exempted from safeguards at the request of the State, provided that nuclear material so exempted in the State may not at any time exceed the quantitative limits of one kilogram in total of special fissionable material, consisting of plutonium or of uranium with an enrichment of a specified percentage; ten metric tons in total of natural and depleted uranium with a certain enrichment; and twenty tons of thorium. If exempted nuclear material is to be processed or stored together with safeguarded nuclear material, provision should be made for the re-application of safeguards thereto (See par. 38).

**Termination of safeguards**
The Agreement should provide for termination of safeguards on nuclear material subject to safeguards thereunder in case of consumption or dilution of nuclear material (See par. 11), transfer of nuclear material out of the State (See par. 12) and in some cases in which the nuclear material is to be used in non-nuclear activities (See par. 13). Transfer of nuclear material out of a State will of course only lead to termination of safeguards in case of transfer to a recipient State wherein the nuclear material will not be subject to Agency safeguards. In that case, the exporting State shall make arrangements for the Agency to receive confirmation by the recipient State of the transfer (within three months, see par. 94). Par. 35 contains some additional provisions on the termination of safeguards relating to the conditions set forth in par. 11 and 13 above.

**International transfers**
With regard to transfers of nuclear material exceeding one effective kilogram out of the State, INFCIRC/153 provides for a system of notifications and maintenance of records in accordance with par. 91 to 94.\(^{695}\) Notification of such international transfer into a State which has concluded a safeguards-agreement with the IAEA is arranged in par. 95 and 96. Both

\(^{695}\) Note, that Art. II of the NPT prohibits NNWS from receiving the transfer of 'nuclear weapons or other nuclear explosive devices' only. 'Effective kilogram' means a special unit of quantity measurement used in safeguarding nuclear material (See par. 104).
transfer out of a State and into a State require advance notification to the IAEA for the purpose of enabling the IAEA if necessary to identify and if possible to verify the quantity and composition of the nuclear material, including affixing seals (transfer out of the State) and inspection of the consignment at the time it is unpacked (transfer into the State). The Agreement should provide that the importing and the exporting State shall make arrangements to determine the point at which the transfer of responsibility for the nuclear material that is being transferred will take place (See par. 91).

Subsidiary Arrangements
INFCIRC/153 provides for a general framework as a necessary basis for the Safeguards Agreement between the Agency and individual States. The Agreement should provide that the Agency and the State shall make Subsidiary Arrangements which shall specify in detail how the procedures laid down in the Agreement are to be applied (See par. 39). Subsidiary Arrangements offer the opportunity to the Agency to adapt the application of the procedures of the general framework to the particularities of each individual State to permit the Agency to fulfil its responsibilities under the Agreement in an effective and efficient manner. The Subsidiary Arrangements can be extended or changed by agreement between the Agency and the State without amendment of the Agreement (See par. 39). The Subsidiary Arrangements, which are concluded between the State and the D-G, remain unpublished.  

Entry into force and duration
The Agreement between the State and the Agency should provide that it shall enter into force on the date on which the Agency receives from the State written notification that the statutory and constitutional requirements for entry into force have been met. The D-G shall promptly inform all Member States of the entry into force (See par. 25). The Agreement should provide for it to remain in force as long as the State is Party to the NPT (par. 26). This implies that withdrawal from the NPT terminates the Safeguards Agreement. The provisions of par. 25 and 26 relate to the validity of the Agreement between the Agency and the State itself. With regard to the implementation of the safeguards, the IAEA safeguards apply to the nuclear material subject to the Agreement between the Agency and the State concerned upon its entry into force. The Subsidiary Arrangements between the Agency and the State shall enter into force at the same time as, or as soon as possible after, the entry into force of the Agreement (par. 40).

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696 See Lohmann (1998), p. 82.
General provisions relating to the supervisory methods in INFCIRC/153

Part II of INFCIRC/153 contains the specification of the procedures to be applied for the implementation of the safeguards provisions of part I (See par. 27). The Agreement between the Agency and the State should provide that the objective of safeguards is the timely detection of diversion of significant quantities of nuclear material from peaceful nuclear activities to the manufacture of nuclear weapons or of other nuclear explosive devices or of purposes unknown, and deterrence of such diversion by the risk of early detection (See par. 28). To this end, the Agency utilises three special safeguards measures (See par. 29). First of all, a measure of fundamental importance is ‘material accountancy’, which is initially based on information on *inter alia* the whereabouts of fissionable material, stocks of fuel and of spent fuel, and the processing and reprocessing of nuclear material as provided by the States themselves. As important complementary measures ‘containment and surveillance techniques’ are used, such as seals which allow conclusions that no material has disappeared and film- and TV-cameras which record any action occurring in a particular area of a nuclear installation. Finally, there is ‘surveillance’ by way of inspections of the IAEA, which constitutes the core of verification under the safeguards-system.

3.2 Monitoring provisions in INFCIRC/153

**General remarks**

The provision and gathering of information is of vital importance, especially when nuclear material is concerned. This has clearly been acknowledged by the drafters of INFCIRC/153. As mentioned, the Agreement should provide that material accountancy is used as a safeguards measure ‘of fundamental importance’, with the other elements of safeguards, containment and surveillance, as important complementary measures (See par. 29). The fundamental importance of material accountancy is illustrated by the fact that the Agency’s verification activities shall be concluded by a statement relating to the amount of nuclear material that has not been accounted for beforehand by the State (See par. 30). The specific procedures for the gathering of information by the Agency and the provision of information by the States to the Agency constitute an important part of the supervisory mechanism of INFCIRC/153. Every State that concludes a safeguards-agreement with the Agency has to establish a ‘national system of accounting for and control of nuclear material’ and shall make provision for the establishment of measures specified in the Subsidiary Arrangements between the Agency and individual States.697

697 See par. 32. These measures *inter alia* consist of a measurement system for the
3.2.1 National system of accounting for and control of nuclear material

The Agreement should provide that the State shall establish and maintain a system of accounting for and control of all nuclear material subject to safeguards under the Agreement, and that such safeguards shall be applied in such a manner as to enable the Agency to verify, in ascertaining that there has been no diversion of nuclear material from peaceful uses to nuclear weapons or other nuclear explosive devices, findings of the State’s system. The Agency’s verification shall include, inter alia, independent measurements and observations conducted by the Agency in accordance with the procedures specified in part II of INFCIRC/153. The Agency, in its verification, shall take due account of the technical effectiveness of the State’s system (See par. 7). This ‘national system of accounting for and control of nuclear material’ (See the heading of par. 7) plays a crucial part in the success or failure of the safeguards system. The Agreement between the Agency and the State should provide that the Agency, in carrying out its verification activities, shall make full use of the State’s system of accounting for and control of all nuclear material subject to safeguards under the Agreement, and shall avoid unnecessary duplication of the State’s accounting and control activities (See par. 31). The Agreement should provide that the State’s system of accounting for and control of all nuclear material subject to safeguards under the Agreement shall be based on a structure of material balance areas (See par. 32). A ‘material balance area’ means an area in or outside a facility such that the quantity of material transferred into or outside the ‘material balance area’ can be determined and the physical inventory (the sum of all the measured or derived estimates of portions of nuclear material on hand at a given time) can be determined when necessary, in order that the material balance for Agency safeguards purposes can be established (See par. 110, 113, 100). The national system for accounting for and control of nuclear material rests upon a national records system per State, several obligations to provide information to the Agency, and a reports system.

3.2.1.1 Records system

In establishing the national system of accounting for and control of nuclear material, the State shall arrange that records are kept in respect of each material balance area (See par. 51). The Agreement should furthermore provide that the records shall consist, as appropriate, of: (a) Accounting determination of quantities of nuclear material received, produced, shipped, lost or otherwise removed from inventory, and the quantities on inventory and procedures for the evaluation and accumulations of unmeasured inventory and unmeasured losses (par. 32(a) and (e)).
records of all nuclear material subject to safeguards under the Agreement; and (b) Operating records for facilities containing such nuclear material (par. 54). The Agreement should provide that the accounting records shall set forth the following in respect of each material balance area: (a) All inventory changes (i.e. an increase or decrease of nuclear material in a material balance area; see par. 107), so as to permit a determination of the book inventory\textsuperscript{698} at any time; (b) All measurement results that are used for determination of the physical inventory; and (c) all adjustments and corrections that have been made in respect of inventory changes, book inventories and physical inventories (par. 56). With regard to the accounting records, the Agreement should provide furthermore that for all inventory changes and physical inventories the records shall show, in respect of each batch of material: material identification, batch data and source data.\textsuperscript{699} For each inventory change, the date and, when appropriate, the originating material balance area and the receiving material balance area or the recipient, shall be indicated (par. 57). With regard to the Operating records, the Agreement should provide that these records shall set forth: (a) those operating data which are used to establish changes in the quantities and composition of nuclear material; (b) the data obtained from the calibration of tanks and instruments and from sampling and analyses, the procedures to control the quality of measurements and the derived estimates of random and systematic error; (c) the description of the sequence of the actions taken in preparing for, and in taking, a physical inventory, in order to ensure that it is correct and complete; and (d) the description of the actions taken in order to ascertain the cause and magnitude of any accidental or unmeasured loss that might occur (See par. 58). It is clear that this national system is meant to

\textsuperscript{698}‘Book inventory’ of a material balance area means the algebraic sum of the most recent physical inventory of that material balance area and of all inventory changes that have occurred since that physical inventory was taken (par. 102). ‘Physical inventory’ means the sum of all the measured or derived estimates of batch quantities of nuclear material on hand at a given time within a material balance area, obtained in accordance with specified procedures (par. 113).

\textsuperscript{699}A ‘batch’ means a portion of nuclear material handled as a unit for accounting purposes at a key measurement point and for which the composition and quantity are defined by a single set of specifications or measurements. The nuclear material may be in bulk form or contained in a number of separate items (par. 100). ‘Batch data’ means the total weight of each element of nuclear material and, in the case of plutonium and uranium, the isotopic composition when appropriate (see par. 101). ‘Source data’ means those data, recorded during measurement or calibration or used to derive empirical relationships, which identify nuclear material and provide batch data. Source data may include, for example, weight of compounds, conversion factors to determine weight of element, specific gravity, element concentration, isotopic ratios, relationship between volume and manometer readings and relationship between plutonium produced and power generated (par. 115). ‘Key measurement point’ means a location where nuclear material appears in such a form that it may be measured to determine material flow or inventory. ‘Key measurement points’ thus include, but are not limited to, the inputs and outputs (including measured discards) and storages in material balance areas (par. 108).
serve purposes fundamental to the safeguards system as a whole, since the State has to make and keep up-to-date its inventory of nuclear material in such a manner as to enable the Agency to verify the findings of the State’s system.

3.2.1.2 Provision of information

Par. 8 deals with the provision of information to the Agency. The Agreement should provide that to ensure the effective implementation of safeguards thereunder the Agency shall be provided, in accordance with the provisions of part II of INFCIRC/153, with information concerning nuclear material subject to safeguards under the Agreement and the features of facilities relevant to safeguarding such material.

Design information

In respect of existing facilities, the Agreement should stipulate that design information of those facilities shall be provided to the Agency during the discussion of the Subsidiary Arrangements, and that the time limits for the provision of such information in respect of new facilities shall be specified in the Subsidiary Arrangements (See par. 42). It is also provided what design information in respect of each facility should be made available to the Agency (See par. 43-45) as well as for what purposes the design information made available to the Agency shall be used (See par. 46). One very important purpose is to enable the Agency to determine material balance areas to be used for Agency accounting purposes and to select those strategic points which are key measurement points and which will be used to determine the nuclear material flows and inventories (See par. 46(b)).

Information in respect of nuclear material outside facilities

Par. 49 provides what information concerning nuclear material customarily used outside facilities shall be provided to the Agency. This information may also be used, to the extent relevant, for the same purposes as the design information of the facilities (See par. 50).

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700 A ‘facility’ is defined as (a) a reactor, a critical facility, a conversion plant, a fabrication plant, a reprocessing plant, an isotope separation plant or a separate storage installation; or (b) any location where nuclear material in amounts greater than one effective kilogram (a special unit used in safeguarding nuclear material; see par. 104) is customarily used (See par. 106). Information pertaining to facilities shall be the minimum necessary for safeguarding nuclear material subject to safeguards under the Agreement. In examining design information of the facilities, the Agency shall at the request of the State, be prepared to examine on premises of the State design information which the State regards as being of particular sensitivity (See par. 8).
The reports system as described in INFCIRC/153, like the records system and the provision of information in general, is part of the national system of accounting for and control of nuclear material. The Agreement should specify that the State shall provide the Agency with reports as detailed in par. 60 to 69 in respect of nuclear material subject to safeguards thereunder (par. 59). The Agreement should provide that reports shall be based on the records kept in accordance with par. 51 to 58 and shall consist, as appropriate, of accounting reports and special reports (see par. 61). In other words, the records system provides the basis for the reports system.

Initial accounting report
An initial accounting report on all nuclear material which is to be subject to safeguards under the Agreement shall be dispatched by the State to the Agency within 30 days of the last day of the calendar month in which the Agreement enters into force (par. 62). On the basis of this initial report the Agency shall establish a unified inventory of all nuclear material in the State subject to safeguards under the Agreement, irrespective of its origin, and maintain this inventory on the basis of subsequent reports and of the results of its verification activities. Copies of the inventory shall be made available to the State at agreed intervals (See par. 41).

Accounting reports
The Agreement should stipulate that for each material balance area the State shall provide the Agency with the following accounting reports: (a) inventory change reports, showing changes in the inventory of nuclear material and (b) material balance reports showing the material balance based on a physical inventory of nuclear material actually present in the material balance area. Both kinds of reports have to be dispatched as soon as possible and in any event within 30 days after respectively the end of the month in which the inventory changes occurred or were established or the physical inventory has been taken (See par. 63). In par. 64 it is specified what information the inventory change reports should contain; par. 67 deals with the contents of material balance reports.\textsuperscript{701} The Agreement should provide

\textsuperscript{701} Inventory change reports shall specify identification and batch data for each batch of nuclear material, the date of the inventory change and, as appropriate, the originating material balance area and the receiving material balance area or the recipient. These reports shall be accompanied by concise notes: (a) Explaining the inventory changes, on the basis of the operating data contained in the operating records provided for under subparagraph 58(a); and (b) Describing, as specified in the Subsidiary Arrangements, the anticipated operational programme, particularly the taking of a physical inventory (par. 64). The material balance reports shall include the following entries: (a) beginning physical inventory; (b) inventory changes (first increases, then decreases); (c) ending book inventory; (d) shipper/receiver differences; (e) adjusted ending book inventory; (f) ending physical inventory; and (g)
that the State shall report each inventory change, adjustment and correction either periodically, in a consolidated list, or individually (See par. 65). The Agreement should stipulate that the Agency shall provide the State with semi-annual statements of book inventory of nuclear material subject to safeguards, for each material balance area, as based on the inventory change reports for the period covered by each such statement (par. 66). These statements of the Agency officially confirm the reported information provided by the State itself. The Agreement should provide that the State shall supply, at the Agency's request, amplifications or clarifications of any report, in so far as relevant for the purpose of safeguards (See par. 69).

Special reports

Next to the various accounting reports, there are so called special reports (See par. 68). Since these reports only have to be made when triggered by special circumstances, they cannot be considered methods of monitoring, but rather methods of the stage of fact-finding within the verification process (see infra). Also with regard to special reports, a State shall supply amplifications or clarifications at the request of the IAEA (par. 69).

3.3 Verification provisions in INFCIRC/153

General remarks

The elaborate monitoring activities pursuant to the safeguards system provide the Agency with general information, specific records and reports with regard to the nuclear material present within the State territory as well as with regard to international transfers involving nuclear material. On the basis of this information, the Agency is required to perform its tasks in applying safeguards for the purpose of verifying that nuclear material is not diverted to nuclear weapons or other nuclear explosive devices (par. 2).

3.3.1 Stage 1 of the verification process: fact-finding

Verification of design information

The accuracy of the design information provided by States with regard to their facilities is of vital importance for the Agency to determine the characteristics of its 'units of measurement' of the flow of nuclear material, viz. the material balance areas. Par. 48 relates to the verification of design material unaccounted for (par. 67).

702 'Adjustment' is defined as an entry into an accounting record or a report showing a shipper/receiver difference or material unaccounted for (par. 98). 'Correction' means an entry into an accounting record or a report to rectify an identified mistake or to reflect an improved measurement of a quantity previously entered into the record or report. Each correction must identify the entry to which it pertains (par. 103).

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information. The Agreement should provide that the Agency, in cooperation with the State, may send inspectors to facilities to verify the design information provided to the Agency pursuant to par. 42-45 for the purposes stated in par. 46. During examination of the design information, strategic points will be selected at which the implementation of safeguards will take place. Verification of design information is treated on one line with *ad hoc* inspections.\(^{703}\)

**Special reports**

Special reports can be considered methods of fact-finding within the verification process. The Agreement should provide that the State shall make special reports without delay: (a) if any unusual incident or circumstances lead the State to believe that there is or may have been loss of nuclear material that exceeds the limits to be specified for this purpose in the Subsidiary Arrangements; or (b) if the containment has unexpectedly changed from that specified in the Subsidiary Arrangements to the extent that unauthorised removal of nuclear material has become possible (par. 68). This paragraph actually describes the ‘triggers’ for the so called ‘special inspections’ which the Agency can conduct pursuant to par. 73 and 77.

Special reports are also relevant in connection with international transfers of nuclear material (par. 91-97). The Agreement should provide that nuclear material subject or required to be subject to safeguards thereunder which is transferred internationally shall, for purposes of the Agreement, be regarded as being the responsibility of the State (a) in the case of import, from the time that such responsibility ceases to lie with the exporting State, and no later than the time at which the nuclear material reaches its destination; and (b) in the case of export, up to the time at which the recipient State assumes such responsibility, and no later than the time at which the nuclear material reaches its destination. The Agreement should provide that the States concerned shall make suitable arrangements to determine the point at which the transfer of responsibility will take place.\(^{704}\) As described before, there is a system of advance notifications to the Agency of all transfers of safeguarded nuclear material in an amount exceeding one effective kilogram out of the State (See par. 92) and into the State (See par. 95). The Agreement should provide that in the case of international transfers a special report as envisaged in par. 68 shall be made if any unusual incident or circumstances lead the State to believe that there is or may have been loss of

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\(^{703}\) Pursuant to par. 83(a), the notice of *ad hoc* inspections and par. 48-inspections is the same; pursuant to par. 85, arrangements for the designation of inspectors for *ad hoc* inspections and for par. 48-inspections are similar.

\(^{704}\) It is made explicit that no State shall be deemed to have such responsibility for nuclear material merely by reason of the fact that the nuclear material is in transit on or over its territory or territorial waters, or that it is being transported under its flag or in its aircraft (See par. 91).
nuclear material, including the occurrence of significant delay during the transfer (par. 97). Thus, ‘special inspections’ can also be made as a reaction to possible loss as a result of an international transfer (See again par. 68, 73, 77).

**General rules on on-site inspections**

The IAEA verifies compliance by means of on-site inspections. Agency inspectors conduct *ad hoc* and routine inspections in the course of which they carry out a number of activities, including examination of records, taking measurements, verification of the functioning and calibration of technical instruments and application of containment and surveillance measures. The Agreement between the Agency and the State should stipulate that the Agency shall have the right to make inspections as provided for in par. 71-82 (par. 70). The Agreement between the Agency and the State should provide that the State shall take the necessary steps to ensure that Agency inspectors can effectively discharge their functions under the Agreement. The Agency shall secure the consent of the State to the designation of Agency inspectors to that State. The State has the freedom to object to the designation, but a repeated refusal can under certain circumstances be considered by the Board of Governors upon referral by the D-G with a view to ‘appropriate action’ (See par. 9).

However in practice, since the grounds for the refusal of a State to accept the designation of inspectors for service in their State have not been explicitly restricted, rejections of whole categories of inspectors have taken place, e.g. on grounds of inspectors’ nationality and language. This imperfection will be remedied by the Model Additional Protocol (see *infra*). The Agreement between the State and the Agency should specify the privileges and immunities which shall be granted to the Agency and its staff in respect of their functions under the Agreement.

The Agreement should provide that the D-G shall inform the State in writing of the name, qualifications, nationality, grade and such other particulars as may be relevant, of each Agency official he proposes for designation as an inspector for the State. The State shall inform the D-G within thirty days of the receipt of such proposal whether it accepts the proposal. The D-G may designate each official who has been accepted by the State as one of the inspectors for the State, and shall inform the State of such designations; and the D-G, acting in response to a request by the State or on his own initiative, shall immediately inform the State of the withdrawal of the designation of

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705 The criterion used is a repeated refusal of a State to accept the designation of Agency inspectors which would ‘impede the inspections conducted under the Agreement’. The ‘appropriate action’ that could be taken by the Board would probably consist of measures relating to the suspension of the privileges and rights of membership (*Cf.* Art. XIX(B) of the IAEA Statute in case of a persistent violator).

any official as an inspector for the State (See par. 85). It is clear that the inspectors are designated for a particular State and can perform different types of inspections. General rules for the conduct and visits of inspectors can be found in par. 87-89. Inspectors shall carry out their activities in a manner designated to avoid hampering or delaying the construction, commissioning or operation of facilities, or affecting their safety. In particular, inspectors shall not operate any facility themselves or direct the staff of a facility to carry out any operation (See par. 87). On the other hand, when inspectors require services available in the State, including the use of equipment, in connection with the performance of inspections, the State shall facilitate the procurement of such services and the use of such equipment by inspectors (See par. 88). Finally, the State has the right to have inspectors accompanied during their inspections by representatives of the State, provided that inspectors shall not thereby be delayed or otherwise impeded in the exercise of their functions (See par. 89).

INFIRC/153 distinguishes between three different types of inspections: *ad hoc* inspections, routine inspections and special inspections. The Agreement should provide that the Agency shall give advance notice to the State before arrival of inspectors at facilities or material balance areas outside facilities (See par. 83). The time lapse of this advance notice depends on the type of inspection.

**Ad hoc inspections**

First of all, *ad hoc* inspections are distinguished (par. 71). The Agreement between the Agency and the State should provide that the Agency may make this kind of inspections in order to: (a) verify the information contained in the initial report on the nuclear material subject to safeguards under the agreement; (b) identify and verify changes in the situation which have occurred since the date of the initial report; and (c) identify, and if possible verify the quantity and composition of, nuclear material in accordance with par. 93 and 96, before its transfer out of or upon its transfer into the state (See par. 71). *Ad hoc* inspections for the purposes stated under par. 71(a) and (b) are only relevant until such time as strategic points have been specified in the Subsidiary Arrangements between the Agency and the State (See par. 76(a)); i.e. until, or shortly after, entry into force of the Agreement.\(^{707}\) In the conduct of *ad hoc* inspections for the purpose of

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\(^{707}\) 'Strategic point' means a location selected during examination of design information where, under normal conditions and when combined with the information from all 'strategic points' taken together, the information necessary and sufficient for the implementation of safeguard measures is obtained and verified; a 'strategic point' may include any location where key measurements related to material balance accountancy are made and where containment and surveillance measures are executed (par. 116). 'To enable the selection of Strategic points' is one of the purposes for which the design information in respect of existing facilities has to be made available to the Agency (See par. 46(f)). This design information has
verifying transfers of nuclear material, inspectors shall have access to any location of which the Agency has been notified in accordance with paragraphs 92(c) or 95(c), viz. in case of transfer out of the State, the locations at which the nuclear material is to be prepared for shipping and in case of transfer into the State, the location to which the nuclear material is to be delivered (See par. 76(b)). The notice before arrival for ad hoc inspections is at least 24 hours for inspections pursuant to par. 71(c) and at least one week for inspections pursuant to par. 71(a) and (b) as well as for activities provided for in par. 48 (See par. 83(a)).

**Routine inspections**
The agreement should provide that the Agency may carry out routine inspections in order to: (a) verify that reports are consistent with records; (b) verify the location, identity, quantity and composition of all nuclear material subject to safeguards under the Agreement; and (c) verify information on the possible causes of material unaccounted for, shipper/receiver differences and uncertainties in the book inventory (See par. 72). These routine inspections are important methods of fact-finding in the process of verification, used by the Agency in order to verify the information gathered and delivered by the State in the phase of monitoring. For the purposes of routine inspections, the Agency's inspectors shall have access only to strategic points specified in the Subsidiary Arrangements and to the records maintained pursuant to paragraphs 51-58, i.e. the Accounting records and the Operating records of the records system (See par. 76(c)). Clearly, the inspectors of the IAEA do not have free access to 'any' location. On the contrary, free access to the strategic points appears to be the maximum attainable: in the event of the State concluding that any unusual circumstances require extended limitations on access by the Agency, the State and the Agency shall promptly make arrangements with a view to enabling the Agency to discharge its safeguards responsibilities in the light of these limitations. The D-G shall report each such arrangements to the Board of Governors (See par. 76(d)). The frequency and intensity of routine inspections have to be regulated in the Agreement in accordance with par. 78-82. The Agreement should provide that the number, intensity, duration and timing of routine inspections shall be kept to the minimum consistent with the effective implementation of the safeguards procedures set forth therein, and that the Agency shall make the optimum and most economical use of available inspection resources (par. 78). Clearly, the infringement on the sovereignty of the States concerned should be kept as limited as

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to be provided during the discussion of the Subsidiary Arrangements (See par. 42). Since it is provided that the subsidiary arrangements shall enter into force at the same time as, or as soon as possible after, the entry into force of the Agreement (See par. 40), ad hoc inspections for initial report verification are therefore only relevant until, or shortly after, entry into force of the Agreement.
possible. This becomes the more clear from the paragraphs that determine the maximal numbers of inspections allowed in different places. The Agreement should provide that in the case of facilities and material balance areas outside facilities with the content or annual throughput, which ever is greater, of nuclear material not exceeding five effective kilograms, routine inspections shall not exceed one per year. For other facilities the number, intensity, duration, timing and mode of inspections shall be determined on the basis that the inspection regime shall be no more intensive than is necessary and sufficient to maintain continuity of knowledge of the flow and inventory of nuclear material (par. 79). This ‘functional’ criterion is supplemented by precise provisions in par. 80, that measure the number of routine inspections allowed in certain percentages of so-called man-years of inspection.

Since only the maximum and not the actual number of inspections have been mentioned, criteria have been drawn up to be used for determining the actual number, intensity, duration, timing and mode of routine inspections of any facility. These criteria include *inter alia* the characteristics of the State’s nuclear fuel cycle and the interrelationship between the nuclear activities of the States and those of other states; the risks posed by the nuclear activities of the State concerned, as well as the effectiveness of the State’s accounting and control system, including the extent to which the operators of facilities are functionally independent of the State’s accounting and control system; the promptness of reports submitted to the Agency; their consistency with the Agency’s independent verification; and the amount and accuracy of the material unaccounted for, as verified by the Agency; or, in other words: the compliance record of the State concerned (See par. 81). The Agreement should provide for consultation between the Agency and the State if the latter considers that the inspection effort is being deployed with undue concentration on particular facilities (par. 82).

Notice before arrival for routine inspections has to be provided at least 24 hours in advance in respect of facilities referred to in par. 80(b) and in sealed stores containing plutonium or uranium enriched to more than 5%, and one week in all other cases (See par. 83(c)). However, the Agreement between the Agency and the State should also provide that, as a supplementary measure, the Agency may carry out without advance

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708 ‘Annual throughput’ means (for the purposes of par. 79 and 80) the amount of nuclear material transferred annually out of a facility working at nominal capacity (see par. 99). The quantity in ‘effective kilograms’ is obtained by taking for plutonium its weight in kilograms, and for uranium and thorium their weight in kilograms multiplied by a factor, depending on their enrichment (see par. 104). ‘Enrichment’ means the ratio of the combined weight of the isotopes uranium-233 and uranium-235 to that of the total uranium in question (par. 105).

709 According to the definition in par. 109, ‘man-year of inspection’ means (for the purpose of par. 80) 300 man-days of inspection, a man-day being a day during which a single inspector has access to a facility at any time for the total of no more than eight hours.
notification a portion of the routine inspections pursuant to par. 80 in accordance with the principle of random sampling.\textsuperscript{710} In carrying out the unannounced inspections, the Agency shall make every effort to minimise any practical difficulties for facility operators and the State. Similarly, the State shall make every effort to facilitate the task of the inspectors (See par. 84).

**Special inspections**

The Agreement should provide that the Agency may make special inspections: (a) in order to verify the information contained in special reports; or (b) if the Agency considers that information made available by the State, including explanations from the State and information obtained from routine inspections, is not adequate for the Agency to fulfil its responsibilities under the Agreement (par. 73). In other words, a special inspection is either indirectly demanded by the special circumstances that necessitated the State to make a special report, or it is demanded because of the shortcomings of routine inspections. As a result of revelations, in February 1992, of a covert nuclear-weapons programme of the DPRK, a State Party to the NPT since 1985, the Board of Governors has reaffirmed the Agency's right to conduct special inspections under its safeguards-agreements with States Parties to the NPT when necessary and appropriate.\textsuperscript{711} An inspection is deemed to be special when it is either additional to the routine inspection effort, or involves access to information or locations in addition to the access specified for *ad hoc* or routine inspections, or both (See par. 73). These wordings imply that special inspections would warrant freedom of access to additional locations to the inspectors. Pursuant to par. 77 however, the Agreement should provide that in circumstances which may lead to special inspections, the State and the Agency shall consult forthwith. As a result of such consultations the Agency may make inspections in addition to the routine inspection effort, and may obtain access in agreement with the State to information or locations in addition to the access specified in par. 76 for *ad hoc* and routine inspections. Any disagreement concerning the need for additional access shall be resolved in accordance with par. 21 and 22; in case action by the State is essential and urgent, par. 18 shall apply. The Agency has in other words no automatic right to conduct a special inspection on additional places, an arrangement which highly respects the sovereignty of the State concerned. The reference to par. 21, 22 and 18 indicates that the procedures on dispute settlement and even correction/enforcement (see *infra*) eventually apply if

\textsuperscript{710} The State concerned is not entirely uncertain as to the moment of unannounced inspections. The Agency shall advise the State periodically of its general programme of announced and unannounced inspections, specifying the general periods when inspections are foreseen (See par. 84).

\textsuperscript{711} GC (XXXVI)/1017. Quoted in UNS-G Report (1995), par. 53.
the Agency cannot perform its verifying tasks properly. A dispute settlement or a correction procedure resulting from a refusal to grant to the inspectors the right to conduct a special inspection at certain places, does not mean that the Agency has found an illegal diversion of nuclear material to nuclear weapons and hence a violation of the NPT. It means that the Agency is not in the position to perform its safeguard activities, which for that matter is considered to be as serious as an established non-compliance given that the correction mechanisms that apply in both cases are the same.

For special inspections, notice before arrival must be provided as promptly as possible after the Agency and the State have consulted as provided for in par. 77, it being understood that notification of arrival normally will constitute part of the consultations (See par. 83(b)).

3.3.2 Stages 2 and 3 of the verification process: review and assessment
The Agreement should provide that the technical conclusion of the Agency’s verification activities shall be a statement, in respect of each material balance area, of the amount of material unaccounted for over a specific period, giving the limits of accuracy of the amounts stated (par. 30). ‘Material unaccounted for’ means the difference between book inventory and physical inventory (See par. 111). In other words, it is the difference between on the one hand the quantity of nuclear material that, according to the (until that moment) most recent physical inventory and the inventory changes that have occurred since that physical inventory was taken, should be present in the material balance area, and on the other hand the quantity of nuclear material that was actually on hand at a given time within this material balance area. Or, to put it simply, it is the quantity of nuclear material that should have been present ‘according to the books’ but that cannot be traced back by way of, and after the completion of, the verification activities of the IAEA.

The Agreement should provide that the Agency shall inform the State of: (a) the results of the inspections, at intervals to be specified in the Subsidiary Arrangements; and (b) the conclusions it has drawn from its verification activities in the State, in particular by means of statements in respect of each material balance area, which shall be made as soon as possible after a physical inventory has been taken and has been verified by the Agency and a material balance has been struck (par. 90). As a result of the inspections, it is the Agency that thus makes an assessment whether or not a violation of the basic undertaking of non-diversion (See par. 1) probably occurred. For the Agency’s statement that a certain amount of material is unaccounted for does not establish that this material unaccounted for has necessarily been diverted to the manufacture of nuclear weapons or of other nuclear explosive devices (See the difference in wording between par. 28 and par. 30). Nevertheless, in practice this difference will be relatively unimportant, since the ‘trigger’ for ‘follow-up’ measures pursuant to the provisions of
INFCIRC/153 is a finding by the Board of Governors that the Agency was not able to verify that there has been no diversion of material to nuclear weapons or other nuclear explosive devices.\textsuperscript{712} Therefore it can be upheld that the Board of Governors has the ability to make assessments of (non-) compliance. Note in this respect again that the safeguards system the other way around cannot, nor pretends to, guarantee full compliance.

3.4 \textit{Provisions on dispute settlement}

The Agreement should provide that the parties thereto shall, at the request of either, consult about any question arising out of the interpretation or application thereof (par. 20). The Agreement should provide that any question arising out of the interpretation or application thereof be considered by the Board of Governors; and that the State shall be invited by the Board to participate in the discussion of any such question by the Board (par. 21). This consultation procedure by both the Agency and the State can be said to primarily see to the prevention of disputes, given that a mere ‘question’ cannot be considered equal to an actual ‘dispute’. The Agreement should provide that any dispute arising out of the interpretation or application thereof, which is not settled by negotiation or another procedure agreed to by the parties, should, on the request of either party, be submitted to an arbitral tribunal. The tribunal would be composed of three arbitrators; each party would designate one arbitrator, and the two arbitrators so designated would elect a third, who would be the chairman. A majority of the members of the arbitral tribunal would constitute a quorum, and all decisions would require the concurrence of two arbitrators. The arbitral procedure would be fixed by the tribunal. The decisions of the tribunal would be binding on both parties (See par. 22). This formal dispute settlement procedure has so far never been used.

Any disagreement which might arise concerning the need for additional access in the course of ‘special inspections’ shall be resolved in accordance with par. 21 and 22 as well (See par. 77). A dispute with regard to a finding by the Board pursuant to the provisions on correction/enforcement measures or an action taken by the Board pursuant to such a finding are explicitly excluded from this dispute settlement mechanism (See par. 22).

\textsuperscript{712} See par. 19. It is clear that both the finding of the presence of amounts of material unaccounted for and the finding of a violation of the general obligation not to divert nuclear material to nuclear weapons would amount to a situation wherein the Agency is not able to verify the absence of diversion of nuclear material to weapons-purposes.
3.5 Provisions on correction/enforcement

Par. 18 and 19 contain provisions under the heading ‘measures in relation to verification of non-diversion’. It has been stated earlier that the purpose of the safeguards system is limited to verification of the declared nuclear fuel cycle of the NNWS. Correction/enforcement measures are therefore directed towards enabling the IAEA to perform its verification activities; the ‘trigger’ of these measures is that because of the behaviour of the State concerned, the Agency is unable to verify that there has been no diversion of nuclear material to weapons purposes. In other words: it is not the established violation of a treaty (e.g., the NPT or a NWFZ-treaty) that triggers the correction/enforcement measures of INFCIRC/153, but the inability of the Agency, caused by the State concerned, to make a statement that diversion of nuclear material to military purposes has not taken place.

The Agreement should provide that if the Board of Governors, upon report of the D-G, decides that an action by the State is essential and urgent in order to ensure verification that nuclear material subject to safeguards under the Agreement is not diverted to nuclear weapons or other nuclear explosive devices, the Board shall be able to call upon the State to take the required action without delay irrespective of whether procedures for the settlement of a dispute have been invoked (par. 18). Also if in the course of a ‘special inspection’ disagreement concerning the need for additional access arises and action by the State is essential and urgent in order to ensure verification of non-diversion, procedures of correction/enforcement shall apply (See par. 77). Denial of additional access which is considered by the Agency to be necessary in order to verify non-diversion, triggers the measures of par. 18 and 19 without prior application of the provisions on dispute settlement being required. The Agreement should provide that if the Board upon examination of relevant information reported to it by the D-G finds that the Agency is not able to verify that there has been no diversion of nuclear material required to be safeguarded under the Agreement to nuclear weapons or other nuclear explosive devices, it may make the report provided for in article XII(C) of the Statute and may also take, where applicable, the other measures provided therein.\(^{713}\) Hence, the findings of the Board may open the way to the application of the enforcement measures provided in the Statute of the IAEA. Note that the findings of the Board pursuant to Art. XII(C) of the Statute relate to non-compliance with Statute obligations.\(^{714}\)

\(^{713}\) See par. 19. This paragraph further provides that, in taking such action the Board shall take account of the degree of assurance provided by the safeguards measures that have been applied and shall afford the State every reasonable opportunity to furnish the Board with any necessary reassurance.

\(^{714}\) Art. XI(A) of the Statute of the IAEA provides that members of the Agency can request the assistance of the Agency to set up any project for research on, or development of practical application of, atomic energy for peaceful purposes. Art. XI(F)(4) states that the assistance of
The linkage between findings of non-compliance and verification of non-diversion is essential. The ‘report’ referred to in par. 19 is a report of ‘non-compliance’ which is sent to all members of the Agency and to the UNSC and the UNGA (See Art. XII(C)). In the event of failure of the State to take fully corrective action within a reasonable time, the Board may take, ('where applicable' adds par. 19), one or both of the following measures: direct curtailment or suspension of assistance being provided by the Agency or by a member, and call for the return of materials and equipment made available to the recipient member. The Agency may also, in accordance with Art. XIX, suspend any non-complying member from the exercise of the privileges and rights of membership. Art. XIX(B) provides that a member which has persistently violated the provisions of the Statute or of any agreement entered into by it pursuant to the Statute (or pursuant to Art. III of the NPT, which is what the application of par. 19 of INFCIRC/153 in fact implies) may be suspended from the exercise of the privileges and rights of membership by the General Conference acting by a two-thirds majority of the members present and voting upon recommendation by the Board of Governors. Like in most arms control treaties, the corrective action that can be brought against a persistent violator is the ‘internal’ sanction of loss of privileges and rights as a member. Finally, mention should be made of the general competence of the Agency to report on its activities to the UNSC: if in connection with the activities of the Agency there should arise questions that are within the competence of the UNSC, the Agency shall notify the UNSC, as the organ bearing the main responsibility for the maintenance of international peace and security, and may also take the measures open to it under the Statute, including those provided in par. C of Art. III(B(4)). The unspecified ability to report to the UNSC (and, the obligation to report annually to the UNGA) as well as the obligation of the Board of Governors to report cases of established non-compliance to both the UNSC and the UNGA (Art. XII(C)) again demonstrate the function of these UN bodies as the ‘coping-stones’ of international supervisory mechanisms.

The role of the UNSC might embrace even more. Art. X(1) of the NPT provides that States may withdraw by giving three months' notice to all the other States Parties and to the UNSC. There has been speculation that the

the Agency shall not be used in such a way as to further any military purpose, and that the project of the State with the assistance of the Agency, shall be subject to the safeguards provided in Art. XII. This Art. XII of the Statute deals inter alia with inspections on the territory of the State concerned in order to verify compliance with Art. XI(F)(4) (See Art. XII(A)(6)). When the inspectors conclude that non-compliance occurred, they report this to the D-G who transmits the report to the Board. Like in par. 19 of INFCIRC/153, the Board shall first call upon the State to remedy any non-compliance which the Board finds to have occurred, before it takes other measures (See Art. XII(C)).

715 See Art. XII(C) of the Statute. This is what happened with regard to Israel after its bombing of an Iraqi nuclear plant in 1981. See on this case Sweeney, Oliver & Leech (1988), p. 1463-1470.
purpose of this latter clause might be that the UNSC could determine that the withdrawal from the NPT would constitute in itself a threat to the peace. In the face of the determination made by the UNSC in 1992 that any proliferation of weapons of mass destruction constitutes in itself a threat to the peace this idea may perhaps not be so far-fetched at all, albeit that a withdrawal in itself does not constitute a proliferation measure yet, but rather a (potential) prelude to it.

3.6 The interpretative element

Since the Board of Governors may consider any question arising out of the interpretation of the Agreement (see par. 21), it appears that interpretative action will (if necessary) be performed by the Board of Governors. Like in other arms control agreements, the many definitions provided in INFCIRC/153 have somewhat diminished the need for interpretation. It should be mentioned that at the review conferences of the NPT (See Art. VIII(3) NPT), the functioning of the safeguards-regime is in fact also at issue when the States Parties discuss the principles, objectives and ways in order to promote the full implementation of the NPT, as well as its universality. At the 1995 Review Conference of the NPT, it was decided that the review conferences should look forward as well as back, in that they should evaluate the results of the period they are reviewing, including the implementation of undertakings of the States Parties under the NPT, and identify the areas in which, and the means through which, further progress should be sought in the future.

4. Enhancing the effectiveness of the safeguards system: the ‘93+2’ programme

4.1 Inducements to strengthen the system

Experiences in practice with the IAEA Safeguards system have been positive. In the first 25 years of the NPT, the system has successfully operated and was extended indefinitely along with the indefinite extension of the NPT in 1995. Still, there have been some less successful cases. One significant example is the case of the DPRK. Following the entry into force of the comprehensive Safeguards Agreement between the Agency and the DPRK in April 1992, the Agency began the task of verifying the initial

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717 See Final Document NPT (1995), Decision 1 ('Strengthening the review process for the treaty').
report on nuclear material subject to safeguards in that State. The Agency concluded that because of significant inconsistencies between information provided by the DPRK and the IAEA Secretariat’s findings, the Secretariat could not confirm the correctness and completeness of the report. Following various efforts to resolve those inconsistencies, the D-G requested access to additional information and to two additional sites in accordance with the special inspection provisions of the safeguards Agreement between the Agency and the DPRK, which was however refused by the latter. The action of the D-G was supported by the Board of Governors in February 1993 and, in May 1993, by the UNSC, after the D-G had reported to it on the non-compliance of the DPRK with its Safeguards Agreement, resulting in the Agency’s inability to verify non-diversion. Inspection of the DPRK’s declared facilities was eventually completed in mid-1994, although the problem of verifying the initial report of the DPRK was further complicated by its discharge of spent fuel from a 5-megawatt experimental nuclear power reactor without the appropriate safeguards measures requested by the Agency. Therefore problems occurred with regard to activities involving the implementation of safeguards on declared materials and facilities, while stalemate continued regarding the requested special inspections in connection with the possible existence of undeclared nuclear material. The Board of Governors adopted another resolution finding the DPRK to remain in non-compliance with its Safeguards Agreement. The DPRK however kept refusing access to inspections of undeclared locations and the UNSC declined to impose sanctions as a reaction, which may be attributable primarily to the view held by China that sanctions would be counterproductive and that the problems could best be resolved through dialogue rather than confrontation. As such, the Korea-case clearly demonstrated the shortcomings inherent in any supervisory mechanism in those instances where a State consistently refuses to comply with obligations originating from an arms control treaty regime and reliance is eventually on the UNSC for enforcement. A final solution was reached outside the IAEA safeguards system: on 21 October 1994, the USA and the DPRK signed an ‘Agreed Framework’, consisting of a number of actions for overall resolution of the nuclear issue on the Korean peninsula. In the ‘Framework’ the DPRK committed itself, inter alia, to remain a party to the NPT, freeze its graphite-moderated reactors programme, and to allow a gradual process leading ultimately to full implementation of its IAEA Safeguards Agreement. The IAEA consented to the ‘Agreed Framework’ but

722 The text of this agreement appears in 24 Arms Control Today (December 1994), p. 19.
maintains that the Safeguards Agreement remaining in force should be fully implemented.\textsuperscript{723}

A second, even more alarming instance of non-compliance with the IAEA safeguards-regime is provided by the case of Iraq. After the defeat of Iraq in the Gulf War, a comprehensive arms control regime was established by the UNSC in Res. 687 of 3 April 1991. Section C of this Resolution requires the elimination, under international supervision, of Iraq’s weapons of mass destruction and ballistic missiles with a range greater than 150 kilometres, together with the related equipment and facilities. A UN Special Commission, UNSCOM, was specifically established for the purpose of supervising compliance by Iraq with its obligations in Res. 687 (1991), but the IAEA was bound to play a role in the nuclear part of the supervision: the D-G of the IAEA was entrusted with the task of eliminating Iraq’s nuclear weapons programme. This was the first time that the IAEA has been given a mandate by the UNSC which goes beyond the Agency’s safeguards agreements with Member States.\textsuperscript{724} By September 1991, the IAEA had discovered a clandestine nuclear weapons programme in Iraq, uncovering three clandestine uranium enrichment programmes, electromagnetic, centrifuge and chemical isotope separation, laboratory-scale plutonium separation as well as conclusive evidence of a nuclear weapons development programme aimed at the implosion-type nuclear weapon, possibly linked to a surface-to-surface missile project.\textsuperscript{725} It thus came out that Iraq, a Member to the NPT since 1969, having a Safeguards Agreement (in force) since 1972, and a Member of the IAEA since 1959, over many years had hidden its nuclear activities successfully from the Agency’s inspections. Statements by the Agency that (almost) no material unaccounted for had been discovered, were threatened to loose their authority.

Therefore, in 1993, the IAEA, with the support of IAEA Member States, decided to start a campaign to enhance the effectiveness of the IAEA safeguards system. Purpose of the programme is to strengthen safeguards in order to enhance their ability to detect any undeclared nuclear activities in a State. Under the heading of the so-called ‘93+2’ - Programme (this refers to the time-frames originally envisaged), a number of proposals have been made to improve the system by strengthening the safeguards and making the system more cost-effective.\textsuperscript{726} A central purpose of the Programme is to provide for increased access for the Agency, both to information about a State’s nuclear activities and to sites in order to verify the additional information that the Agency seeks to obtain. To this end, the States Parties

\textsuperscript{723} See in this respect e.g. GC(43)/RES/3, 1 October 1999, wherein the General Conference urges the DPRK to co-operate fully with the Agency in the implementation of the safeguards agreement.


to the NPT are encouraged to enhance transparency about all aspects of their nuclear programme towards the IAEA.

The safeguards strengthening measures introduced by the IAEA include the early provision of information about the design of new nuclear plants and modifications to existing ones; more systematic collection and analysis of information available in the media and from other open source literature about nuclear activities in a State; and the voluntary reporting by States, over and above the reporting requirements, of their imports and exports of nuclear material and of certain equipment and non-nuclear material used in the nuclear industry. The first phase of this programme was approved by the Board of Governors in June 1995. At that meeting, the Board took note of the D-G's plan to implement, at an early date, measures for which legal authority already existed. These relate to measures on greater access to information, for example, through environmental sampling,727 and to sites, for example, through no-notice inspections at locations where the Agency already has access for routine inspections. Since all states have to accept the new proposals individually, it may take some time before this new safeguards system will be implemented. The second phase of the Programme was approved by the Board of Governors on May 15, 1997, resulting in the ‘Model Additional Protocol’ to strengthen and improve the effectiveness and efficiency of the IAEA Safeguards system as a contribution to global nuclear non-proliferation objectives.728

4.2 The Model Additional Protocol

The Model Additional Protocol (INFCIRC/540) is, as its title indicates, meant to be additional to the Agreement(s) for the application of safeguards that have been concluded between the member States and the IAEA. The Model Additional Protocol is designed for States already having in place safeguards agreements with the Agency. The provisions of the Safeguards Agreement shall apply to the Additional Protocol to the extent that they are relevant to and compatible with the provisions of the Additional Protocol. In case of conflict between the provisions of the Safeguards Agreement and those of the Protocol, the provisions of the Protocol shall apply (Art. 1 (of the Protocol)). This provision constitutes no more than an affirmation of the principle lex posterior derogat legi priori. Considering that the general provisions of INFCIRC/153 are applicable (as long as relevant and compatible) to the Additional Protocol, it is not surprising that the

727 Environmental sampling is used in the nuclear area to detect traces of radioactive materials from samples swiped from buildings and collected from vegetation, the soil and water sources. It was first used by IAEA in its inspections in Iraq and later in the DPRK to detect the possibility of undeclared nuclear activities. See UNS-G report (1995), note 28 and par. 64; Sloss (1995), p. 889.

Additional Protocol does not contain provisions on topics that have already been sufficiently arranged in the safeguards agreements, such as provisions on the settlement of disputes, on amendments and on duration. The prevalence of the Protocol does mean however that the designation of Agency inspectors will take place via the system of ‘automatic approval, unless rejection within three months’ (See Art. 11), whereas formerly a State Party had to specifically approve persons as inspectors for the State.  

The term ‘Model’ (Additional Protocol) is something of a misnomer; the Board of Governors has directed that the Additional Protocols to be concluded between the Agency and the parties to the Safeguards Agreements shall contain all of the measures in the Model Additional Protocol (see the foreword to the Protocol). All the measures in the Model Protocol must be included and any linguistic changes to the provisions in the Protocol cannot alter the substance of those provisions. This is underlined by the Protocol’s provisions on Subsidiary Arrangements (Art. 13), which contrary to par. 39 of INFCIRC/153, do not apply automatically but are only relevant in case the State Party or the Agency indicate that it is necessary to specify how measures laid down in the Protocol are to be applied.

4.2.1 Objectives of the Model Additional Protocol

The Additional Protocol is designed to provide the Agency with access to more information and to additional locations as compared to the existing safeguards agreements. The final objective of the Model Protocol is still the same as under the comprehensive safeguards agreements: to make sure that no undeclared nuclear material and activities exist in a State which might be used to divert nuclear material to weapons purposes. The Protocol however bears recognition of the newly perceived need to locate possible undeclared activities. The Agency’s right to obtain additional information is intended to supply the IAEA with a fuller and clearer understanding of the nuclear activities in the States - information particularly relevant to assess capabilities to produce nuclear weapons usable material. The Agency will use its right of increased access to locations to assure that no undeclared nuclear activities are concealed within a State’s declared nuclear program and to resolve any questions that may arise regarding consistency of the State’s declared program with any other information available to the Agency. The right to increased access has been prompted first and foremost by the negative experiences with the functioning of the Safeguards Agreement with Iraq.

729 See INFCIRC/153, par. 9: “The Agency shall secure the consent of the State to the designation of Agency inspectors to that State.”

4.2.2 Monitoring provisions in the Model Additional Protocol

The provisions in the Additional Protocol can be divided into two categories. First, there is an article on the provision of information (Art. 2) with a complementary article on the time-frames that are to be applied to the provision of this information (Art. 3). This part of the Additional Protocol is designed to strengthen the phase of monitoring of the safeguards agreements. This is done primarily by requiring the State Party to provide, in a declaration, information about activities that previously fell outside the safeguards regime or the relevance of which was determined by quantitative criteria, and by requiring information on activities that used to be marginally dealt with by, or were exempted from, the application of safeguards. With regard to the providing of various sources of information, it is stated that this ‘does not require detailed nuclear material accountancy’ (see Art. 2(a)(v, vi(a), vii(b))); no doubt this is so because the Agency ‘shall not mechanistically or systematically seek to verify the information referred to in article 2’ (See Art. 4(a)).

As compared to the declaration required by Art. 2(a), in Art. 2(b) the State Party faces a less strict obligation (a rule of conduct rather than of result) in that the State Party is required to make ‘every reasonable effort’ to provide the Agency with the information described in Art. 2(b). The ‘weakness’ of this rule is counterbalanced by the simple but compelling procedure for clarification requests of the Agency that is applicable to Art. 2 as a whole. The Agency has laid down, in two Annexes, descriptions of the activities on which the States Parties should provide information pursuant to Art. 2(a)(iv) and 2(a)(ix), respectively. As such, the Agency leads the States Parties into standardising the information it seeks to gather.

The time-limits that are laid down in Art. 3 make clear that the provision of information pursuant to Art. 2 of the Additional Protocol is incident-independent and repetitive. After the ‘initial’ provision of information within specified time-frames, each year (by 15 May) updates of the information must be provided (for the period covering the previous calendar

731 See Art. 2(a)(i), on research and development activities not involving nuclear material; 2(a)(ii), on agreed to information on operational activities of safeguards relevance at facilities and locations outside facilities; 2(a)(iii), on general descriptions of each building on each site; 2(a)(iv) and Annex I, on descriptions of the scale of operations for each location engaged in Annex I activities; 2(a)(v), on uranium mines and concentration plants and thorium concentration plants; 2(a)(vi(a)), on information regarding source material not suitable for fuel fabrication or for being isotopically enriched, when exceeding certain specified quantities; 2(a)(x), on 10-year plans relevant to the development of the State Party’s nuclear fuel cycle.

732 See Art. 2(a)(vi(b, c) and 2(a)(ix) and Annex II, on exports and imports; 2(a)(vii) on material exempted; 2(a)(viii) on terminated safeguards.

733 See Art. 2(c), simply stating that the State Party, upon request by the Agency, ‘shall’ provide amplifications or clarifications of any information it has provided under Art. 2, in so far as relevant for the purpose of safeguards. This provision is similar to the provisions on clarification of Accounting and Special Reports in par. 69 of INFCIRC/153.
year). The provision of information, like the implementation of the entire Protocol, is covered by a ‘stringent regime’ to ensure effective protection against disclosure of confidential information (See Art. 15). This ‘confidentiality regime’ shall be approved and periodically reviewed by the Board of Governors (Art. 15(c)). This article is clearly inspired by the ‘Confidentiality Annex’ of the CWC; importantly, it shall include ‘procedures in cases of breach or alleged breaches of confidentiality’ (Art. 15(b(iii))).

4.2.3 Verification provisions in the Model Additional Protocol

General remarks
An important strengthening of the safeguards system consists in the ‘complementary access’ of Agency inspectors (See Art. 4). The right to additional access shall explicitly not be used to verify ‘mechanistically or systematically’ the information referred to in Art. 2 of the Protocol. However, in Art. 4(a) it is indicated for what purposes the Agency shall have access to the locations to which the State Party is obliged, pursuant to Art. 5, to provide the Agency with access. The Agency may, first of all, have access to any place on a site (Art. 5(a)(i)) or any location identified by the State Party under Art. 2(a(v)-(viii)) (See Art. 5(a)(ii)) ‘on a selective basis in order to assure the absence of undeclared nuclear material and activities’ (Art. 4(a(i))). Furthermore, the Agency has access to several locations identified by the State Party under Art. 2 of the Protocol to resolve a question relating to the correctness and completeness of the information provided or to resolve an inconsistency relating to that information (Art. 4(a(ii))). In case the State Party is unable to provide such access, it shall make every effort to satisfy Agency requirements, without delay, through other means (See Art. 5(b)). Access to any so-called ‘decommissioned facility or decommissioned location outside facilities where nuclear material was customarily used’734 must be granted to the extent necessary for the Agency to confirm, for safeguards purposes, the State Party’s declaration of those facilities (See Art. 4(a(iii))). Finally, to other locations specified by the Agency, the Agency has access to carry out ‘location specific environmental sampling’, provided that if the State Party is unable to provide such access, it shall make every reasonable effort to satisfy Agency requirements, without delay, at adjacent locations or through other means (Art. 5(c)). In short, for purposes of the Agency’s (non-mechanic and non-systematic) verification of the information provided by the State Party, it is anticipated (and apparently accepted) that the State Party cannot always provide full access to the Agency inspectors.

734 See Art. 5(a(iii)). The definition of ‘decommissioned facility’ can (‘for the purpose of the Protocol’) be found in Art. 18(c) of the Protocol.
Stage 1 of the verification process: fact-finding

The fact-finding methods of verification that may be used by the Agency when implementing the complementary access regime, are summed up in Art. 6 of the Protocol. Varying with the purposes for which access is sought, these methods include: visual observation; collection of environmental samples; utilisation of radiation detection and measurement devices; item counting of nuclear material; application of seals and other identifying devices; examination of relevant records; and other objective measures which have been demonstrated to be technically feasible and the use of which has been agreed by the Board of Governors and following consultations between the Agency and the State Party concerned. One new safeguards-method is the use of so-called ‘wide-area environmental sampling’ (defined in Art. 18(g)). A State Party to the Additional Protocol accepts the future use of this method. However, since its status as a technically feasible, objective and cost-effective measure has yet to be demonstrated, Art. 9 provides that the Agency shall not seek to carry out such environmental sampling until its use and the institutional arrangements therefore have been approved by the Board.

The Agency shall give advance notice of access, in writing and specifying the reasons for access and the activities to be carried out during such access, of at least 24 hours (Art. 4(b(i)) and (c)). Only for access to any place on a site (defined in Art. 18(b)), and notwithstanding the nature of the inspection on that site, the period of advance notice is much shorter; two hours in principle but, in exceptional circumstances, even less than two hours (Art. 4(b(ii))). It is clear that assuring the absence of undeclared nuclear material and activities is the primary purpose of the Agency’s verification activities; the activities that are directly related to that purpose place the most stringent obligations on the State Party (including acceptance of the conduct of inspections at the ‘shortest’ notice possible). Still, the State Party may request the Agency to make arrangements for managed access under the Protocol, in order to prevent the dissemination of proliferation sensitive information and to protect proprietary or commercially sensitive information. Such arrangements however, shall not preclude the Agency from conducting activities necessary to provide credible assurance of the absence of undeclared nuclear materials and activities at the location in question, including activities in the course of obtaining clarifications (See Art. 7).

Coupled with the right to additional access for purposes of verification is the Agency’s right of access to appropriate and effective communications systems (including satellite systems and other forms of telecommunication) for official purposes between Agency inspectors present in the territory of the inspected State Party and Agency Headquarters or Regional Offices (See Art. 14(a)). The communication and transmission of information shall take
due account of the need to protect sensitive information (Art. 14(b)), which is in line with the general protection of information in the implementation of the Protocol (See Art. 15). In case the attempted operation of the fact-finding methods would give rise to a question or inconsistency, the Agency shall provide the State Party with an opportunity to clarify and facilitate the resolution of the question or inconsistency (Art. 4(d)). Such an opportunity will be provided before a request for access, unless the Agency considers that delay in access would prejudice the purpose for which the access is sought.

Stages 2 and 3 of the verification process: review and assessment

The Agency shall inform the State-Party of the activities carried out under the Protocol within 60 days, as well as the results of activities in respect of questions or inconsistencies the Agency had brought to the attention of the State Party (Art. 10(a, b)). The assessment part is made explicit in Art. 10(c): the Agency shall inform the State Party of the conclusions it has drawn from its activities under the Protocol. The conclusions shall be provided annually.

Although the annual provision of assessments appears to qualify the assessment as incident-unrelated and repetitive, the different stages in the ‘complementary access’ provisions indicate that the Agency verifies the nuclear-related activities of the State Party, both on the basis of on-site inspections and the additional information provided by the States Parties themselves. In case of non-compliance the procedures of dispute settlement and correction/enforcement as provided in INFCIRC/153 and the Statute of the Agency apply. As is often found in arms control agreements, the States Parties under the Protocol also have the right to actively demonstrate compliance by requesting the Agency to conduct verification activities at a particular location (See Art. 8).
III. The CTBT and the CTBTO

1. A brief note on history

1.1 The development of nuclear weapons
After the first and so far only use of nuclear weapons in 1945, there was general consensus that the most horrific, but at the same time most powerful weapon ever had been developed. Both legally and politically, nuclear test explosions are of fundamental importance, as immediately becomes clear from the definition of ‘NWS’ as laid down in the NPT; this is a State ‘that manufactured and exploded a nuclear weapon or other nuclear explosive device prior to January 1, 1967’. During almost five decades, the NWS have used nuclear test explosions as the principal means to achieve qualitative improvement and further development of their nuclear arsenal. New designs not fully tested through explosions were not deemed reliable. Even more powerful nuclear explosive devices, so-called thermonuclear weapons, were developed and tested in the 1950s. An accident with a US nuclear test at Bikini atoll in the northern Pacific in 1954, with Japanese fisherman exposed to radiation and 7,000 square miles of ocean area contaminated, demonstrated the uncontrollable devastating power of the new weapon around the world and provided a strong incentive to consider the attainment of a test ban as a purpose in itself. The call for the discontinuance of nuclear test explosions eventually resulted in the cessation of all atmospheric test explosions by the end of the 1970s. However, the NWS subsequently continued and even increased their testing programmes by conducting underground nuclear test explosions (only periodically interrupted by the proclamation of unilateral testing moratoria).

1.2 Test ban and non-proliferation
As the UNGA observed in 1978, the cessation of nuclear weapon testing by all States within the framework of an effective nuclear disarmament process would make a significant contribution to the aim of ending the qualitative

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735 Art. IX(3) NPT. Five States are recognised as NWS in the sense of the NPT, viz. China, France, Russia (as successor to the SU), the UK and the US. The US conducted its first nuclear test explosion in 1945, Russia (then SU) followed in 1949, the UK in 1952, France in 1960 and China in 1964. See Goldblat & Cox (1988), p. 3.
737 In 1963 the UK, the US and the SU concluded the LTBT (see Chapter [5]). France and China never became parties to the LTBT. France continued atmospheric testing until 1974 (ICJ Nuclear Test Cases). China conducted its last atmospheric tests in 1980 and ceased further preparations for tests after a series of protests made by both neighbouring and distant States against radioactive contamination resulting from the Chinese nuclear explosions. See Grief (1987), p. 231; Goldblat & Cox (1988), p. 10.
improvement of nuclear weapons and the development of new types of such weapons and of preventing the proliferation of nuclear weapons. The strong linkage between a test ban and non-proliferation is obvious. For many years the Non-Aligned States (which believe the NPT to be a highly discriminatory treaty), have considered the progress made towards the establishment of a Nuclear Test Ban Treaty to be a perfect yardstick for measuring the advance towards the attainment of the objectives stated in the NPT with regard to nuclear disarmament (especially Art. VI of the NPT). Also the NWS themselves consider the CTBT to be a concrete step towards the fulfilment of the obligation under Art. VI of the NPT. In the 1995 Review Conference of the NPT, the NWS decided to bring into existence a CTBT ‘no later than 1996’.

The link between the objective of banning all nuclear test explosions and the prevention of nuclear proliferation is also recognised in the CTBT itself. In the preamble to the CTBT, the States Parties ‘recognise’ that the cessation of all nuclear weapon test explosions and all other nuclear explosions, by constraining (not: ending) the development and qualitative improvement of nuclear weapons and ending the development of advanced new types of nuclear weapons, constitutes an effective measure of nuclear disarmament and non-proliferation in all its aspects. The NWS, as well as the UNSC, in reaction to the nuclear test explosions conducted by India and Pakistan, explicitly linked the Non-Proliferation regime with the CTBT, and reaffirmed their commitment to and the crucial importance of the NPT and the CTBT ‘as the cornerstones of the international regime on the non-proliferation of nuclear weapons and as essential foundations for the pursuit

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738 See SSOD-I (1978), par. 51. Cf. also Goldblat & Cox (1988), p. 5, who assert that it is evident that a stop to nuclear testing would also put an end to the development of essentially new nuclear weapons.


740 See CD/1393, 30 April 1996: “(...) we agreed that a CTBT will be a concrete step toward the achievement of one of the highest priority objectives of the international community in the field of disarmament and non-proliferation, and the fulfilment of the obligation under article VI of the [NPT]”. The text of the CD-document is part of a Declaration adopted at the G-8 Summit held in Moscow in 1996. See also the Declaration made upon signature of the CTBT by China (24 September 1996) in UN Doc. A/52/545, 30 October 1997: “China is deeply convinced that the [CTBT] will facilitate nuclear disarmament and nuclear non-proliferation (...).”


742 In the Draft Treaty Text of the CTBT of April 1996, the Preamble still contained the following paragraphs: “16. Emphasising that the principal objective of this Treaty is to end the qualitative improvement and development of nuclear weapon systems, 17. Affirming that this Treaty seeks to achieve the discontinuance of all nuclear weapon test [explosions] and all other nuclear explosions”. See CD/WP.325, 1 April 1996, ‘Ad Hoc Committee on a nuclear Test Ban: Rolling Text of the Treaty’. From this it becomes clear that originally two objectives stood out, viz. the ending of the qualitative improvement and development of nuclear weapons and the ending of the nuclear explosions *per se.*
of nuclear disarmament’. As is common in arms control treaties, the preamble to the CTBT presents the treaty as a ‘step’ within a larger process, with a ‘limited’ higher goal, viz. to achieve nuclear disarmament, which in turn is part of the common ultimate objective of general and complete disarmament under strict and effective international control.

As regards the entry into force of the CTBT, there are still many difficulties that need to be overcome. It was considered that in order for the CTBT to be meaningful, all nuclear capable States should join the treaty. Therefore, Art. XIV(1) makes the entry into force of the CTBT dependent on the ratification of 44 specifically designated nuclear capable States. So far, of those States on whose ratification entry into force has been made dependent, India, Pakistan and the DPRK have refused even to sign the treaty, whereas the US and China, both of which serve as a ‘role-model’ in their respective spheres of influence, have signed but not ratified. A Conference, held in October 1999 to facilitate the entry into force of the CTBT has not brought about any difference in the position of the States mentioned. Although the preparations for the entry into force and the functioning of the supervisory mechanisms continue in the framework of a Preparatory Commission, it may take several more years before the CTBT can enter into force.

2. The scope of the substantive law in the CTBT

The basic obligations laid down in the CTBT appear simple and uncomplicated. However, during the negotiations of the treaty determining the scope of the basic obligations proved to be one of the most difficult stumbling-blocks for the negotiators. At the heart of the difficulties was the question whether the CTBT was to prohibit all nuclear test explosions (for weapon purposes and for so-called ‘peaceful’ purposes) or only nuclear explosions for purposes of testing weapons. Arguments against permitting so-called peaceful nuclear explosions (PNEs) under the CTBT were that it is impossible to make a distinction between PNEs and weapon test explosions.

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744 As identified in Annex 2 to the treaty. The 44 States include the NWS, India, Pakistan, Israel and the DPRK.

745 See the Report and the Final Declaration adopted by the ‘Conference on Facilitating the Entry into Force of the Comprehensive nuclear Test Ban Treaty’, Vienna, 6-8 October, 1999. This Conference was held on the basis of Art. XIV(2) of the CTBT, three years after the date of the anniversary of its opening for signature.

(rendering verification of compliance virtually impossible) and the fact that there are no known advantages of PNEs that could justify the political, economic and environmental costs of those peaceful explosions. For a long time, China - being the only one to do so - supported the exception of PNEs under the CTBT regime. Those NWS that had conducted only few test explosions, especially France and China, were afraid a total prohibition on test explosions would tie down a legal situation in which their weapons would remain technically inferior or less advanced than the nuclear stockpiles of the US and Russia. Both States therefore decided to conduct a series of (underground) nuclear test explosions in order to ‘make up arrears’. Only after that, both France and China felt they could accede to the CTBT. China eventually dropped its demand for the exclusion of PNEs under the CTBT regime, but insisted as a ‘face-saver’ on including in the article on Review of the CTBT the possibility that on the basis of the request by any State Party, the Review Conference shall consider the possibility of permitting the conduct of underground nuclear explosions for peaceful purposes (Art. VIII(1)). However, pursuant to this article the Review Conference is required to decide by consensus that such nuclear explosions may be permitted, rendering it practically impossible that PNEs will ever be allowed under the CTBT.

The basic obligations of the CTBT constitute a general prohibition on the carrying out of any nuclear weapon test explosion or any other nuclear explosion, and to prohibit and prevent any such nuclear explosion at any place under the State’s jurisdiction or control (Art. I(1)). In contrast with the CWC, the substantive obligations of the CTBT do not contain the phrase ‘never under any circumstances’. This might indicate that the NWS have sought to keep open the possibility to resume testing in exceptional circumstances, such as in times of strategic warfare, without having to withdraw from the treaty. The US in particular has a consistent policy of considering that nuclear arms control treaties cease to be binding in times of war, especially if a threat of nuclear war emerged (see infra, Chapter [7]). However, of more direct concern than the remote chance of a nuclear war is the use of sub-critical test explosions for safety and reliability simulations and the so-called Stockpile Stewardship Program of the US. It is clear that the use of computer simulations is exempted from the prohibition laid down in the CTBT, but with regard to the use of so-called sub-critical test explosions, which are not ‘nuclear’ test explosions and therefore fall outside


748 In his Statement before the CD on 28 March 1996, the Chinese delegation-leader said: “That as an important principle, any disarmament or arms control treaty should not hinder the development and application of science and technology for peaceful purposes. Therefore it would be incorrect if the CTBT should ban PNEs (...). China cannot abandon forever any promising and potentially useful technology that may be suited to is economic needs”. See Johnson (1996), p. 17.
the scope of the prohibitions of the CTBT, it is difficult to determine whether or not they are reconcilable with the object and purpose of the treaty.

Under the CTBT, each State Party furthermore undertakes to refrain from causing, encouraging, or in any way participating in the carrying out of any nuclear weapon test explosion or any other nuclear explosion (Art. I(2)). As such, the NWS are prohibited from assisting any NNWS in developing a nuclear weapons capability. This prohibition - supplementary to the NPT regime as it is - does not have a counterpart in the supervisory mechanism of the CTBT.

3. The supervisory mechanism of the CTBT: the supervising body

3.1 The CTBTO

The States Parties to the CTBT establish the Comprehensive nuclear Test-Ban Treaty Organisation (CTBTO, or ‘the Organisation’) to achieve the object and purpose of the CTBT, to ensure the implementation of its provisions, including those for international verification of compliance with it, and to provide a forum for consultation and co-operation among States Parties (Art. II(1)). The CTBTO, an independent organisation (See Art. II(8)), constitutes the institutional framework for both the implementation of, and the supervision of compliance with, the CTBT. Still, it is possible for the Organisation to enter into co-operative arrangements with other international organisations such as the IAEA, so as to utilise existing expertise and facilities and to maximise cost-efficiencies.\(^{749}\) The Organisation shall enjoy on the territory and in any other place under the jurisdiction or control of a State Party such legal capacity and such privileges and immunities as are necessary for the exercise of its functions (Art. II(E)(54)). The CTBTO is meant to function as an independent international organisation.\(^{750}\)

All States Parties shall be members of the CTBTO (Art. II(2)). The possibility of deprivation of membership in the CTBTO is excluded (and therefore loss of membership cannot be applied as an ‘internal’ sanction). The institutional framework of the CTBTO has been influenced to a large

\(^{749}\) Art. II(8). Such arrangements shall be set out in agreements to be submitted to the CSP for approval. In earlier drafts of the treaty, the CTBTO was allowed to co-operate with the IAEA ‘and other bodies’, whereby it could delegate functions in a way maximal consistent with adequate financial and resource management.

\(^{750}\) The phrase ‘as an independent organisation’ which can now be found in Art. II(8), was added to the Rolling Text of the treaty (i.e. the text under negotiation) on 22 January 1996 (CD/1378, p. 2) and remained in the final version of the Rolling Text (par. 10, p. 21). Also the extensive comments made by Australia stipulate that the CTBTO is independent, see CD/1387, 29 February 1996: Australia, Comprehensive Test Ban Treaty, Explanatory Notes Accompanying Model Treaty Text, p. 13.
degree by the CWC. The paragraph about the verification activities of the CTBTO even is identical to the one relating to the verification activities of the OPCW.\textsuperscript{751} The well-known inherent tension between on the one hand conducting verification activities in the ‘least intrusive manner possible’ and protecting the confidentiality of civil and military activities and facilities in the implementation of the treaty, and on the other hand the ‘timely and efficient accomplishment of the objectives’ of verification is merely illustrated but not solved by this paragraph. As organs of the CTBTO are established: the Conference of the States Parties (CSP), the Executive Council (EC) and the Technical Secretariat (TS), which shall include the International Data Centre (Art. II(4)).

3.1.1 The Conference of the States Parties (CSP)

\textit{Composition, procedures, decision-making}

The CSP shall be composed of all States Parties, each State Party having one representative (Art. II(12)). The CSP meets in annual regular sessions, and may meet in special session when decided by the CSP, requested by the EC or requested by any State Party supported by a majority of the States Parties (Art. II(14-15)). The CSP may also be convened as an ‘Amendment-Conference’ or as a ‘Review Conference’.\textsuperscript{752} A majority of the States Parties shall constitute a quorum; each State Party shall have one vote (Art. II(20-21)). The CSP takes decisions on institutional matters by majority vote of the members present and voting. Decisions on matters of substance shall be taken as far as possible by consensus. However, if consensus cannot be reached when an issue comes up for decision, the President of the CSP (who is elected by the CSP, see Art. II(19)), has 24 hours to make every effort to facilitate achievement of consensus. If consensus is still not possible after 24 hours, the CSP shall take the decision by a two-thirds majority of members present and voting unless specified otherwise in the treaty (Art. II(22)).\textsuperscript{753} One important occasion of such specified decision-making relates to changes in the composition of the Executive Council (EC). The CSP shall take a decision to add any State to the list of States serving on the EC (contained in Annex 1 to the Treaty) in accordance with the rules on voting on matters of substance; however any other change to Annex 1 (e.g., placing a member of the EC in another area of geographical distribution) shall be decided by consensus (Art. II(23) and 26(k)).

\textsuperscript{751} Compare Art. II(6) of the CTBT with Art. VIII(5) of the CWC.

\textsuperscript{752} See Art. II(16) and Art. VII, and see Art. II(17) and Art. VIII.

\textsuperscript{753} When the issue arises as to whether the question is one of substance or not, that question shall be treated as a matter of substance unless otherwise decided by the majority required for matters of substance, see the final part of Art. II(22).
Powers and functions

The CSP, as the principal organ of the CTBTO, has a virtually unlimited power to consider 'any questions, matters or issues within the scope of the treaty', including those relating to the powers and functions of the EC and the TS, in accordance with the treaty (Art. II(24)). The CSP is empowered to make recommendations and to take decisions on any questions, matters or issues within the scope of the treaty raised by a State Party or brought to its attention by the EC (Art. II(24)). Whereas the term 'recommendation' relates to non-binding acts of the CSP, the term 'decision' relates to its legal acts, that are binding on the States Parties to the CTBT. Taking into account that certain decisions eventually may be taken by a two-thirds majority, the CTBT opens up the possibility that States Parties are bound to observe the legal acts of the Organisation against their will. In the internal relationship of the organs of the CTBTO the CSP shall oversee the activities of the EC and of the TS and may issue guidelines to either of them for the exercise of their functions (Art. II(25)).

The CSP shall oversee the implementation of, and review compliance with, the treaty and act in order to promote its object and purpose (Art. II(25)). This power to 'act' encompasses inter alia the power to 'take the necessary measures to ensure compliance with the treaty and to redress and remedy any situation that contravenes the provisions of the treaty, in accordance with Art. V' (Art. II(26(g)). The CSP may establish such subsidiary organs as it finds necessary on the basis of Art. II(26(j)) and Art. VI(4). The CSP is also the organ that shall consider and review scientific and technological developments that could affect the operation of the treaty. In that context, the CSP may direct the Director-General (the head of the TS) to establish a 'Scientific Advisory Board' to render specialised advice in areas of science and technology relevant to the treaty (Art. II(26(f)). Delegates of States Parties, together with their alternates and advisers enjoy such privileges and immunities as are necessary in the independent exercise of their functions in connection with the Organisation (Art. II(55)).

3.1.2 The Executive Council (EC)

Composition, procedures, decision-making

The composition of the EC has been a point of ongoing controversy during the negotiations of the CTBT.754 According to Art. II(27), the EC shall consist of 51 members. The EC shall meet for regular sessions and may in between meet as may be required for the fulfilment of its powers and

754 The number of members was to be either 65 or 41 according to the Rolling Text of the treaty of 1996 (par. 31). Par. 34 of that same text stated as such that the EC would comprise 65 members. In the Model Treaty Text of the CTBT that was issued by Australia to speed up the negotiations (29 February 1996), the EC, following the text of the CWC, was to consist of 41 members. See CD/1386, p. 13 and CD/1387, p. 16.

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functions (Art. II(34)). Each member of the EC shall have one representative on the EC (Art. II(30)), and shall have one vote (Art. II(35)). The members of the EC shall be elected on a rotational basis from all States Parties divided over six geographical regions that are listed in Annex 1 to the treaty, thus enabling all States Parties to serve on the EC (see Art. II(27)). Each member shall hold office for the period of one year (Art. II(31)). During the negotiations on the treaty, initially the option was kept open that each of the NWS occupied a permanent seat in the EC; an option that the other States considered to be a discriminatory measure. Art. II(29) now provides that at least one-third of the seats allocated to each geographical region shall be filled, taking into account political and security interests, by States Parties in that region designated on the basis of the nuclear capabilities relevant to the treaty as determined by international data as well as all or any of three indicative criteria which relate to the States’ participation in the monitoring activities under the treaty and to the contribution to the annual budget. Even though these criteria cannot be called discriminatory, they still allocate preference to those States that take a major part in operating the treaty, especially its supervisory mechanism.

The EC shall take decisions on matters of procedure by a majority of all its members. Decisions on matters of substance are taken by a two-thirds majority of all its members unless specified otherwise in the treaty (Art. II(36)). This ‘triumph of majority rule’ is only on the surface, since the treaty does not specify a quorum for the EC. The current Art. II(36) could even imply that all members of the EC should be present and voting for the EC to be able to take decisions in the first place.

Powers and functions
The EC shall be the executive organ of the CTBTO. It shall be responsible to the CSP and in carrying out the powers and functions entrusted to it, the EC shall act in conformity with the recommendations, decisions and guidelines of the CSP and ensure their continuous and proper implementation (Art. II(37)). Internally, i.e. within the Organisation, there appears to be no difference in binding force between decisions and recommendations of the CSP; the EC shall have to carry out the acts of the CSP whereas vice versa the EC may only make (non-binding)

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755 See Johnsson (1995), p. 19-20. This option was held open in e.g. the 1996 Rolling Text of the treaty, par. 32.

756 In earlier versions of the Rolling Text, it was held that a 2/3 majority on the EC constituted the quorum. The Australian Model Treaty Text therefore proposed to have decisions taken by the EC with a 2/3 majority of the members ‘present and voting’, to prevent the situation from occurring in which the EC would have to take decisions with only 2/3 of its members (the quorum) present and voting since in such situation each member of the EC present would have a de facto right of veto. In the Australian proposal, 2/3 of 2/3 of all members on the EC would have been sufficient to take a majority decision in the EC. See CD/1387, p. 18.
recommendations to the CSP. Still, the carefully drafted and complicated rules on the composition of the organ reveal that the EC may prove to play a more important role in practice than its subordination to the CSP seems to imply.

Indeed, when considering its powers more carefully it becomes clear that the EC bears primary responsibility for the functioning of the mechanism for the supervision of compliance with the CTBT. The EC not only is the supervisor of the activities of the TS (Art. II(38(b)), it shall also facilitate co-operation relating to the implementation of the treaty through information exchanges, facilitate consultation and clarification among States Parties in accordance with Art. IV of the treaty, and receive, consider, and take action on requests for, and reports on, on-site inspections in accordance with Art. IV (Art. II(40); Art. IV(46)). Furthermore, the EC shall consider any concern raised by a State Party about possible non-compliance with the treaty and abuse of the rights established by the treaty. In so doing, the EC shall consult with the States Parties involved and, as appropriate, request a State Party to take measures to redress the situation within a specified time. To the extent that the EC considers further action to be necessary, it shall take, *inter alia*, one or more of the following measures: (a) notify all States Parties of the issue or matter; (b) bring the issue or matter to the attention of the CSP; (c) make recommendations to the CSP or take action regarding measures to redress the situation and to ensure compliance in accordance with Art. V (See Art. II(41)). In short, the EC has a wide margin of discretion in determining what action to undertake with regard to supervision of compliance with the CTBT. The representatives of members elected to the EC, together with their alternates and advisers, enjoy such privileges and immunities as are necessary in the independent exercise of their functions in connection with the Organisation (Art. II(55)).

3.1.3 The Technical Secretariat (TS)

*Composition and procedures*

The TS shall comprise a Director-General (D-G), who shall be its head and chief administrative officer, and such scientific, technical and other personnel as may be required. The D-G shall be appointed by the CSP upon the recommendation of the EC for a term of four years, renewable for one further term (Art. II(49)). The D-G has wide responsibilities. To the CSP and the EC, he shall be responsible for the appointment of the staff and for the organisation and functioning of the TS (Art. II(50)). The D-G shall assume responsibility for the activities of inspection teams (Art. II(52)).

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757 Not only the use of the term 'recommendation' indicates that the EC cannot bind the CSP; also the place of the CSP as the 'principal organ' of the Organisation (Art. II(24)) demands this.
52 and 53 of Art. II ensure the independence of the D-G, the inspectors, the inspection assistants and the members of the staff of the TS. They shall not seek or receive instructions from any Government or from any other source external to the Organisation. Each State Party shall respect the exclusively international character of the responsibilities of the D-G, the inspectors, the inspection assistants and the members of the staff and shall not seek to influence them in the discharge of their responsibilities. The D-G and the inspectors, the inspection assistants and the staff of the TS shall enjoy functional privileges and immunities (See Art. II(55), but during the conduct of verification activities they shall enjoy such privileges and immunities as set forth in the Protocol to the CTBT (See Art. II(57)).

Powers and functions

The TS shall assist States Parties in the implementation of the treaty and shall assist the CSP and the EC in the performance of their functions. It shall carry out the verification and other functions entrusted to it by the treaty, as well as those functions delegated to it by the CSP or the EC in accordance with the treaty (Art. II(42)). The TS has an important role in the verification of the treaty (see Art. II(43)) and is responsible for, *inter alia*, supervising and co-ordinating the operation of the International Monitoring System (IMS; see below), routinely receiving, processing, analysing and reporting on IMS-data, assisting the EC in facilitating consultation and clarification among States Parties, and receiving requests for on-site inspections and processing them, carrying out preparations for, and providing technical support during the conduct of inspections, and reporting to the EC.

During the negotiations, there was controversy about who should conduct the *analysis* of the IMS data. Some States Parties, primarily the USA, initially wanted to keep the analysis of data out of the hands of the TS and into their own hands.758 There is a direct link between the activities of the TS and those of the EC in supervision of the CTBT: the TS shall promptly inform the EC of any problems that have arisen with regard to the discharge of its functions that have come to its notice in the performance of its activities and that it has been unable to resolve through consultations with the State Party concerned (Art. II(48)). This link between the TS and the EC may, for example, be of practical importance with regard to the proper conduct of on-site inspections.

Next to its powers and functions with regard to supervision, the TS has functions and responsibilities with respect to administrative matters and the budget of the Organisation, see Art. II(45-47).

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758 The Non-Aligned Countries were of the opinion that the CTBTO should have the capacity and the responsibility to conduct the analysis of all data. See Johnson (1996), p. 11 and 18. Australia, in its Explanatory Notes to the Model Treaty Text, asserted in support of the Non-Aligned view that it would not be practical for the States Parties if the role of the TS was limited to providing enormous quantities of raw data. See CD/1387, p. 30.
The International Data Centre (IDC)

As will be illustrated, the (routine) storage and processing of data is of utmost importance in the supervisory mechanism of the CTBT. The TS shall to this end include, as an integral part, the IDC, which shall serve as the focal point for data storage and processing (Art. II(42); Art. IV(14(b)). The functions of the IDC in regard to the International Monitoring System (IMS, see below) are specified in Part I of the Protocol to the CTBT. The IDC shall apply on a routine basis automatic processing methods and interactive human analysis to raw IMS data in order to produce and archive standard IDC products on behalf of all States Parties (Protocol Part I, par. 18). Annex 2 to the Protocol contains a 'list of Characterisation Parameters for IDC Standard Event Screening'. In the performance of its functions, the IDC shall make use of so-called 'Standard Event Screening Criteria' that are based on the Annex 2 Characterisation Parameters.

4. The supervisory mechanism of the CTBT: methods of supervision

General remarks

The extensive Art. IV of the CTBT contains the 'verification regime' of the treaty. It consists of the following elements (Art. IV(1)):

(a) an International Monitoring System (IMS);
(b) Consultation and clarification;
(c) On-site inspections; and
(d) Confidence-building measures.

There is a separate Protocol to the CTBT with contains additional rules with regard to the IMS (Part I of the Protocol), On-site inspections (Part II of the Protocol) and with regard to Confidence-building measures (Part III of the Protocol). Part I of the Protocol in turn has two Annexes, one with a List of Seismological Stations (comprising the primary network of the IMS) and the other containing the aforementioned 'List of Characterisation Parameters for IDC Standard Event Screening'. The Annexes to the treaty, the Protocol and the Annexes to the Protocol form an integral part of the treaty (Art. X).

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759 Even though the CTBT speaks of a 'verification' regime, the methods that are part of the regime clearly serve monitoring purposes as well.

760 Earlier drafts of the CTBT contained a fifth element, called 'National or Multinational Means of Verification'. It referred to the international exchange of additional relevant information that would not originate from the other supervisory-methods. In the Australian Model Treaty Text, element (d) was referred to as 'Associated Measures and the International Exchange of Other Relevant Information' (see CD/1387, p. 27); apparently this was to be some kind of mixture of the current fourth and the proposed fifth element.
Interestingly, it is provided that upon entry into force of the CTBT, the verification regime ‘shall be capable of meeting the verification requirements of the Treaty’ (Art. IV(1)). Originally, the draft text of the CTBT contained an express provision (in brackets) on the objective of the verification regime: “[The goal of the verification regime of the CTBT shall be to detect in a timely manner [and accurately identify] any nuclear [weapon] test [explosion] prohibited under the Treaty. [The IMS system established should possess the technical capability required to meet this goal]]”. Clearly, the ability to verify compliance with the treaty is considered so essential, that entry into force of the CTBT in effect has been made dependent on it; apparently, the States Parties would rather have no treaty at all than a treaty compliance with which cannot be properly verified.

An important general provision is that all States Parties, irrespective of their technical and financial capabilities, shall enjoy the equal right of verification and assume the equal responsibility of verification (Art. IV(4)). However, this paragraph does not stand in the way of using (information obtained by) NTMs in accordance with international law as a supervisory method under the treaty (see Art. IV(5)). The inherent tension between guaranteeing ‘full respect for the sovereignty of the States Parties’ on the one hand and endeavouring ‘the effective and timely accomplishment of the objectives of the verification activities’ on the other hand (see Art. IV(2)), has also in the CTBT been translated into provisions on the right to protect sensitive installations and the confidentiality of information obtained during verification activities as well as the obligation to avoid the hampering of international exchange of data for scientific purposes and of the application of atomic energy for peaceful purposes (See Art. IV(7-13)).

4.1 Monitoring provisions in the CTBT

4.1.1 NTMs
First and foremost, NTMs may be used (if consistent with generally recognised principles of international law, including that of respect for the sovereignty of States) as a means to obtain information about compliance-behaviour of the States Parties to the treaty (Art. IV(5)). During the negotiations of the treaty it became clear that Russia advocated the use of NTMs as a cost-effective and highly deterrent method. Most of the Non-Aligned States have kept reserves fearing a discriminatory use of NTMs,

761 See CD/NTB/WP.325, 1 April 1996: Ad Hoc Committee on a Nuclear Test Ban; Rolling Text of the Treaty. For the same reason (viz. the build-up of the supervisory mechanism), Art. XIV(1) provided that the CTBT was in no case to enter into force earlier than two years after its opening for signature. At present, one of the primary tasks of the Preparatory Commission is the build-up of the CTBT’s supervisory mechanism. See CTBT/MSS/RES/1, 19 November 1996, Art. 13 and Appendix ‘Indicative List of verification tasks of the Preparatory Commission’. See further Den Dekker (2000).
and originally China and Pakistan were completely opposed to incorporating NTMs in the supervisory mechanism of the CTBT.\textsuperscript{762}

4.1.2 International Monitoring System (IMS)

An effective system for supervising the absence of nuclear test explosions first of all needs methods that are capable of detecting relevant seismic signals against the background noises of wind, sea, storm, and industrial activities. Furthermore, the methods must be capable of identifying those signals so as to separate them from similar signals that are brought about by other human activities and earthquakes.\textsuperscript{763} It is for those purposes – i.e. detection and identification - that the IMS has been established. The IMS, which shall be placed under the authority of the TS (Art. IV(17)), comprises different monitoring-methods that all utilise networks of coupled data recording facilities. Those facilities are either part of international networks or have been based on national systems that have been made available to the CTBTO (be it or not on a contract-basis) by the States Parties. Any changes to the IMS are to be made in accordance with par. 23-27 of Art. IV. For example, in cases of significant or irretrievable breakdown of a primary monitoring facility the D-G shall (with the approval of the EC) initiate temporary arrangements of no more than one year’s duration (Art. IV(26)).

The IMS, which shall be supported by the IDC of the TS, shall comprise facilities for (Art. IV(16)):

- seismological monitoring,
- radionuclide monitoring (including certified laboratories),
- hydroacoustic monitoring,
- infrasound monitoring.

This means that in the IMS, movements in the crust of the earth (seismological), radioactive particles and gases in the atmosphere (radionuclide), the movement of sounds under water (hydroacoustic) and movements of sounds in the atmosphere (infrasound) are being measured.\textsuperscript{764} In addition to the provisions in Art. IV, Part I of the Protocol to the CTBT contains detailed arrangements for the IMS (and related IDC functions). The core of the IMS is formed by a global network of primary and auxiliary (‘supplementary’) seismological monitoring stations, 170 in total.\textsuperscript{765} Each

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\textsuperscript{762} See Johnson (1995), p. 20 and see Statements to the CD: China, India, Pakistan, Russia, 28 March 1996. In CD/1425, 16 August 1996, p. 15 ‘safeguards against abuse’ of NTMs embedded in the CTBT are described.

\textsuperscript{763} See Fakley (1988), p. 159.

\textsuperscript{764} Cf. Sweet (1996), p. 29.

\textsuperscript{765} See the Protocol to the CTBT, Part I (B), par. 7 and 8. There will be 50 primary stations, specified in Table 1-A of Annex 1 to the Protocol, and 120 auxiliary stations, specified in Table 1-B of Annex 1 to the Protocol.
State Party undertakes to co-operate in an international exchange of seismological data to assist in the verification of compliance with the treaty; this co-operation shall include the establishment and operation of the global network of seismological monitoring stations. These stations shall provide data in accordance with agreed procedures to the IDC (See Protocol Part I(B(6))). Each State Party shall have the right to participate in the international exchange of data and to have access to all data made available to the IDC (Art. IV(18)). Each State Party furthermore undertakes to co-operate in an international exchange of data on radionuclides in the atmosphere, on hydroacoustic data, as well as on infrasound data to assist in the verification of compliance with the treaty (See Annex I (B), par. 9, 12, and 14). Like with the exchange of seismological data, each of these monitoring methods consists of a network of stations.\(^\text{766}\) The technical and operational requirements that shall have to be fulfilled by the Stations are specified in ‘Operational Manuals’.\(^\text{767}\) With regard to the radionuclide Stations there is the additional criterion that forty of those Stations shall be capable of monitoring for the presence of relevant noble gases.\(^\text{768}\) The network of radionuclide monitoring Stations shall be supported by a number of the TS certified laboratories that will be required to perform the analysis of samples from the radionuclide Stations (Protocol Part I, par. 10). During the negotiations, Pakistan and China originally wanted the IMS to comprise two more facilities, viz. satellites and Electro-Magnetic Pulse (EMP) monitoring. This demand was eventually opposed for reasons of cost-effectiveness, not because such data were not valued.\(^\text{769}\) On the contrary, it can be expected that satellites will be employed anyhow, as NTMs in (unilaterally) supervising compliance with the CTBT. Apart from the costs, the issue was of course whether such effective methods as satellites should be brought in the hands of the international supervising organisation or were to remain in the hands of the individual States Parties, as eventually happened.

The IDC has many tasks and responsibilities related to the functioning of the IMS. It shall receive, collect, process, analyse, report on and archive data from IMS facilities, including the results of analysis conducted at certified laboratories (Protocol Part I, par. 16). On a routine basis, the IDC shall

\(^\text{766}\) There have been listed in Annex 1 to the Protocol 80 radionuclide Stations (Table 2-A) and 16 Certified Laboratories (Table 2-B); 11 hydroacoustic Stations (Table 3) and 60 infrasound Stations (Table 4).

\(^\text{767}\) References are to the Operational Manuals for Seismological, Radionuclide, Hydroacoustic, Infrasound Monitoring and the International Exchange of Seismological, Radionuclide, Hydroacoustic, Infrasound Data (See Par. 7, 10, 13 and 15 of the Protocol).

\(^\text{768}\) Every nuclear explosion, no matter how small its yield, releases some noble gases such as Xenon and Krypton. In principle, it is impossible that a nuclear explosion would not be detected. Or, as Austria stated before the CD: “Noble gases might be the only information carriers leaving the scene of a clandestine nuclear test”. See Johnson (1996), p. 18.

apply automatic processing methods and interactive human analysis to raw IMS data in order to produce and archive standard IDC products on behalf of all States Parties which shall be provided at no costs to the States Parties (Protocol Part I, par. 18). Also, the IDC shall provide States Parties with open, equal, timely and convenient access to all IMS data, raw or processed, all IDC products, and all other IMS data in the archive of the IDC or through the IDC of IMS facilities (Protocol Part I, par. 20).  

4.1.3 The IMS and assessments regarding compliance  
It is clear that the exchange of this whole range of monitoring data and their subsequent routine processing, including analysis, by the IDC into ‘standard IDC products’ in itself produces enough evidence to make an assessment as to whether or not some suspicious event actually constituted a clandestine nuclear explosion. Originally, the Rolling Text of the treaty supported this idea by stating:  

“[The Executive Council shall, on the basis of the results of the preliminary identification made by the International Data Centre and taking into account all the relevant factors, make the determination and judgement on whether the suspicious event is a nuclear weapon test]”

This means that the EC would have been in the position to determine that a violation of the substantive norms of the CTBT took place, on the sole basis of the preliminary identification made by the IDC. This idea has been radically altered in the final text of the Treaty. The CTBT now makes explicitly clear that the IDC processed data shall be without prejudice to the ‘final judgement with regard to the nature of any event, which shall remain the responsibility of the States Parties’ (see Protocol Part I, par. 18). Even when the IDC is requested by a State Party to help identify the source of specific events, it is made clear that the output of such technical analysis shall be considered a product of the requesting State Party and therefore not of the IDC (see Protocol Part I, par. 20(c), 21). Still, the standard IDC products shall include ‘standard screened event bulletins’ that result from the application to each event by the IDC of standard event screening criteria, making use of the characterisation parameters specified in Annex 2 to the Protocol, ‘with the objective of characterising, highlighting in the standard event bulletin, and thereby screening out, events considered to be consistent with natural phenomena or non-nuclear, man-made phenomena. The standard event bulletin shall indicate for each event the degree to which that event meets or does not meet the event screening criteria’ (Protocol Part I, par. 18(b)). It is therefore obvious that the standard IDC products offer to

770 See par. 36 of CD/NTB/WP.325, 1 April 1996.
the States Parties the possibility of determining for themselves whether some kind of suspicious event probably did constitute a nuclear explosion. In other words: the exchange of data and their (preliminary) review have been institutionalised, whereas the assessment resulting therefrom has been left to the individual States Parties. Thus, when serious doubts are raised with regard to the compliance-behaviour of some State Party (as a result of the standard IDC products) the States Parties have to make use of the verification provisions of the CTBT before an assessment can be made.

4.1.4 Confidence-Building Measures
The (voluntary) Confidence-Building Measures constitute one category of measures in the supervisory mechanism of the CTBT that cannot easily be 'classified', since they relate to chemical test-explosions that are not prohibited under the CTBT. Pursuant to Art. IV(68), each State Party undertakes to co-operate with the CTBTO and with other States Parties in implementing, on a voluntary basis, the relevant Confidence-Building Measures as set out in Part III of the Protocol. Those involve notification to the TS (if possible, in advance) of any chemical explosion using 300 tonnes or greater of TNT-equivalent blasting material, and establish a liaison with the TS to carry out chemical calibration explosions. The purpose of these measures is, inter alia, to contribute to the timely resolution of any compliance concerns arising from possible misinterpretation of verification data relating to chemical explosions.

4.2 Verification provisions in the CTBT

General remarks
The CTBT on the one hand makes use of the term 'verification' as encompassing the entire supervisory mechanism of the treaty (Art. IV(1)). On the other hand, the treaty consistently refers to the methods of the IMS as 'international data exchanges to assist in the verification of compliance with the treaty', which means that the distinction between the phases of monitoring and verification can be upheld. It is clear that the large-scale exchange and routine processing of data pursuant to the provisions on monitoring in the CTBT are meant to provide the factual information which is indispensable for the functioning of the process of verification. The fact that in the CTBT the collection of information takes place centralised and internationally (namely, by the IDC which is an integral part of the TS, itself

771 It will be clear that a 'chemical' explosion means an explosion not involving nuclear components; it has nothing to do with chemical weapons.
772 Co-operation between the States Parties may take the form of offering access to technical information gathered by way of 'non IMS' verification technologies, such as satellites and Electro-Magnetic Pulse (EMP) Monitoring. Cf. CD/1387, p. 52.
an organ of the CTBTO) instead of by way of declarations by the individual States Parties, explains the absence of provisions on the verification of declarations in the CTBT. Instead, the CTBT provides for 'consultation and clarification' and for 'on-site inspection' as the methods of the verification process.

4.2.1 Stage 1 of the verification process: fact-finding

Additional fact-finding by way of consultation and clarification

It is clear that in the CTBT system with its highly developed continuous fact-finding machinery, viz. the IMS, other fact-finding methods only play a supportive, additional role. In that regard, consultation and clarification should be tried before a State Party requests an OSI.\(^{773}\) States Parties should, whenever possible, first make every effort to clarify and resolve, among themselves or with or through the CTBTO, any matter which may cause concern about possible non-compliance with the basic obligations of the treaty (Art. IV(29)). Like in other arms control treaties, both an inter-State variant ('among themselves') and an institutionalised variant ('through the CTBTO') of the clarification procedures are available.\(^{774}\) In the institutionalised variant a State Party shall have the right to request the EC to obtain clarification on any matter which may cause concern about possible non-compliance with the basic obligations of the treaty (See Art. IV(32)). Within 24 hours, the EC, through the D-G, shall forward the request for clarification to the requested State Party, which, in its turn, shall provide the clarification to the EC within 48 hours after receipt of the request. The EC shall take note of the clarification and forward it within 24 hours to the requesting State Party, which, if it deems the clarification to be inadequate, has the right to request the EC to obtain further clarification from the requested State Party. All States Parties are informed about any request for clarification as well as any response provided. It is clear that the initiative during the institutionalised clarification-procedure lies with the requesting State Party. If the requesting State Party considers the further clarification provided to be unsatisfactory as well, it shall have the right to request a meeting of the EC in which States Parties involved shall be entitled to take part (also if they are not members of the EC at that moment).

\(^{773}\) As Art. IV(29) states that the obligation to clarify and resolve issues first is 'without prejudice to the right of any State Party to request an on-site inspection'. Cf. also CD/1387 p. 37, stipulating that as a rule States should first clarify any concerns about non-compliance before requesting an OSI.

\(^{774}\) In the 'inter-State' variant, the State Party that receives the request shall provide the clarification no later than 48 hours after the request. The requesting and requested States Parties are not obliged ('may') to keep the EC and the D-G informed of the request and the response (Art. IV(30)), but a State Party shall have the right to request the D-G to assist in clarifying any matter which may cause concern about possible non-compliance with the basic obligations of the treaty (See Art. IV(31)).
At such a meeting, the EC shall consider the matter and may recommend any measure in accordance with Art. V of the treaty (See Art. IV(33)). Before the EC undertakes action on the basis of Art. V, which is concerned with ‘measures to redress a situation and to ensure compliance, including sanctions’, instead an OSI might be the right method to obtain the clarification sought.\(^775\)

**Additional fact-finding by way of on-site inspections**

The issue of OSI has been complex and occupied a prominent place in the negotiations on the CTBT. OSI in the CTBT can only take place at the request of a State Party and after the State Party that is to be inspected has received a request for clarification. Therefore, OSI under the CTBT is neither of a ‘routine’ nature, nor of a real ‘challenge’ nature. The sole purpose of an OSI shall be to clarify whether a nuclear weapon test explosion or any other nuclear explosion has been carried out in violation of article I and, to the extent possible, to gather any facts which might assist in identifying any possible violator (Art. IV(35)). From these wordings it appears that OSI is to be seen as a method of ‘last resort’ in the context of clarifying already suspicious events rather than as an independent fact-finding method standing on equal footing with other fact-finding methods.\(^776\)

The OSI request shall be based on information collected by the IMS, on any relevant technical information obtained by NTMs in a manner consistent with generally recognised principles of international law, or on a combination thereof (Art. IV(37)). It is noticeable that NTM-gathered information may constitute the sole basis for an OSI request. The CTBT provides some guidelines to prevent abuse of the right to request OSI,\(^777\) but it does not remedy the apparent inequality between those States Parties that possess NTMs and that hence may request an OSI on the basis of those NTMs, and those States Parties that do not have NTMs and that are therefore deprived of this latter possibility.

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\(^775\) Art. IV(37) provides that the OSI request shall be based on information collected by the IMS, on relevant technical information obtained by NTMs, or on a combination of both.

\(^776\) Still it is believed that the OSI can be carried out rapidly and therefore will prove to be effective. Especially the US, the UK, France and the other Western States regarded OSI as such, whereas China, Israel, Pakistan and Russia considered OSI more as an method of ‘last resort’. See Johnson (1995), p. 24. In contrast, the Australian commentary to the draft text of the CTBT of 29 February 1996 considered OSI to serve a wider purpose, viz. not only the collection of information to see whether or not a nuclear explosion had occurred, but also general fact-finding on the basis of which an assessment concerning compliance could be made. See CD/1387, p. 43.

\(^777\) For example, Art. IV(36) states that the requesting State Party shall be under the obligation to keep the OSI request within the scope of the treaty and shall refrain from unfounded or abusive inspection requests.
Each State Party has the right to request an OSI in the territory or in any other place under the jurisdiction or control of any State Party.778 Note, that this concerns only a right to request an inspection, to be conducted by the CTBTO; the States Parties are all under the corollary obligation to permit the CTBTO to conduct an OSI (but not more than one at the same time) on their territories or places under their jurisdiction or control (see Art. IV(56)). An OSI shall only be carried out by qualified inspectors specially designed for this function; the inspectors and their assistants shall be nominated for designation by the States Parties. The inspectors (and their assistants) on the list of inspectors proposed for designation shall be regarded as accepted unless a State Party declares its non-acceptance in writing.779 The members of the inspection team shall be accorded (functional) privileges and immunities to exercise their functions effectively (Protocol, Part I, par. 26-31). The size of the inspection team shall be kept to the minimum necessary for the proper fulfilment of the inspection mandate, and shall not exceed 40 persons. The inspection team is designated by the D-G; the D-G also issues the inspection mandate for the conduct of the OSI and shall notify the inspected State Party no less than 24 hours before the planned arrival of the inspection team at the point of entry (Art. IV(53-55)). The D-G shall determine the size of the inspection team and shall select its members from the list of inspectors (Protocol, Part II, par. 9-10).

In the CTBT the conduct of OSI has been surrounded by many procedural guarantees. First, the requesting State Party shall present the inspection request to the EC and the D-G (Art. IV(38)), the latter of which must ascertain that the request meets the requirements specified in Part II, par. 41 of the Protocol (Art. IV(40)). The D-G shall immediately seek clarification from the State Party sought to be inspected in order to clarify and resolve the concern raised in the request; the State Party shall provide explanations within 72 hours after this clarification request (Art. IV(42-43)). Besides the explanations obtained, the D-G shall transmit to the EC any additional information available from the IMS or provided by any State Party or from within the TS (Art. IV(44)). Within 96 hours after receipt of the OSI request, the EC shall take a decision on the OSI request.780 The decision to

778 Art. IV(34). In addition, this paragraph grants to each State Party the right to request a OSI in any area beyond the jurisdiction or control of any State. The procedure for the ‘Conduct of inspections in Areas beyond the Jurisdiction or Control of any State’ is laid down in Protocol Part II, par. 105-108.

779 See the Protocol to the CTBT, Part II, par. 14-25. A State Party shall have the right to object to an inspector (or assistant) at any time, albeit that when an inspection has been notified, the State Party shall not seek the removal from the inspection team of any of the inspectors (or their assistants) named in the mandate. Protocol, Part II, par. 22-23. In CD/1387, p. 85, the objection is raised that reconciling the nomination of the inspectors by the States Parties themselves with the fact that the inspectors should perform their duties independently is difficult.

780 That is, unless the requesting State Party considers the concern raised in the OSI request to
approve the OSI request shall be made by at least 30 affirmative votes.\(^{781}\)

The procedure to be followed after the OSI has been initially approved provides another strong indication that under the CTBT, OSI is a method of last resort. No later than 25 days after approval, the inspection team shall transmit to the EC, through the D-G, a progress inspection report. The continuation of the OSI shall be considered approved unless the EC, no later than 72 hours after receipt of the progress inspection report, decides by a majority of all its members not to continue the inspection (See Art. IV(47)). The reason behind this ‘moment of decision’ in the procedure is that depending on whether the OSI is in its ‘initial’ or ‘continued’ phase, the inspection team will have less (initial) or more (continued) special inspection-methods at its disposal.\(^{782}\) Generally speaking the inspection team shall, whenever possible, begin with the least intrusive procedures and then proceed to the more intrusive procedures only as it deems necessary to collect sufficient information to clarify the concern about possible non-compliance with the treaty (Art. IV(58)). The techniques that may be used and activities that may be conducted by the inspection team during the inspection include visual observation, aerial observation, measurement of levels of radioactivity using gamma radiation monitoring and energy resolution analysis, environmental sampling and analysis of solids, liquids and gases, and passive seismological monitoring for aftershocks to localise the search area and facilitate determination of the nature of the event (Protocol, Part II, par. 69(a-e)). Any time following the approval of the continuation of the OSI in accordance with par. 47, the inspection team may submit to the EC, through the D-G, a recommendation to terminate the inspection. Such a recommendation shall be considered approved unless the EC, decides by a two-thirds majority of all its members not to approve the termination of the inspection (Art. IV(50)). This means the inspection team has quite a strong voice in the continuation of the OSI.\(^{783}\)

As has been noticed before, the conduct of the OSI is regulated by barely reconcilable provisions; for example, the inspected State party has both the

\(^{781}\) Art. IV(46)). This is a compromise; the 30/51-voting requirement lies in between a simple majority (26/51) and a two-third majority (34/51). China and Russia originally desired a 2/3 or even ¾-majority rule and India, Pakistan and others supported this position. On the other hand, after the first session of 1996 some delegations considered that a simple majority would be sufficient. See Johnson (1996), p. 20 and see CD/1425, 16 August 1996, p. 15-16.

\(^{782}\) Following the continuation of the OSI, the inspection team may make use of ‘resonance seismometry and active seismic surveys to search for and locate underground anomalies, including cavities and rubble zones’ and ‘magnetic and gravitational field mapping, ground penetrating radar and electrical conductivity measurements at the surface and from the air, as appropriate, to detect anomalies and artefacts’ as additional techniques. See Protocol, Part II, par. 69(f-g) and 70.

\(^{783}\) On the other hand, the inspection team may also request the EC to extend the inspection duration by a maximum of 70 days beyond the usual 60-day time frame specified in Part II, par. 4 of the Protocol (Art. IV(49)).
'right and obligation' to make every reasonable effort to demonstrate its compliance with the treaty and thus to enable the inspection team to fulfil its mandate, but at the same time the inspected State has the right to take measures it deems necessary to protect national interests and to prevent disclosure of confidential information not related to the purpose of the inspection (see Art. IV(57)). Also, the OSI shall be conducted in the least intrusive manner possible consistent with the efficient and timely accomplishment of the inspection mandate (Art. IV(58)). Furthermore, the inspected State Party has the right to restrict access within the inspection area but then has the obligation to make every reasonable effort to demonstrate through alternative means its compliance with the treaty (Art. IV(60)). ‘Access’ in the context of an OSI means both the physical access of the inspection team and the inspection equipment to, and the conduct of inspection activities within, the inspection area (See Art. IV(57)). Under the ‘managed access’ provisions, the inspected State Party shall have the right throughout the inspection area to take measures to protect sensitive installations and locations and to prevent disclosure of confidential information not related to the purpose of the inspection; the ‘managed access’ regime relates both to the inspection area and to the facilities and structures therein (Protocol, Part II, par. 86-96). Again, the powers of the inspection team are more extensive once continuation of the inspection has been approved, but it is provided that the inspected State Party shall have the right to make the final decision regarding any access of the inspection team, taking into account its obligations under the treaty and the provisions on managed access (Protocol, Part II, par. 88(c)). Some particular intrusive fact-finding methods, viz. overflights over the inspection area and the collection and removal of relevant samples from the inspection area, are invested with even more specific procedures and guarantees. Upon conclusion of the inspection, the inspection team shall meet with the representative of the inspected State Party to review the preliminary findings of the inspection team and to clarify any ambiguities. The OSI results in

784 See e.g. Protocol part II, par. 91: “If, following the continuation of the inspection in accordance with Art. V, par. 47, the inspection team demonstrates credibility to the inspected State Party that access to buildings and other structures is necessary to fulfil the inspection mandate (...), the inspection team shall have the right to gain access to such buildings or other structures.” A similar provision is made with regard to access to the site, but here no reference is made to the decision on the continuation of the inspection (par. 96).

785 See Protocol Part II, par. 71-85 and par. 97-104. The inspection team shall have the right to conduct an overflight over the inspection area; additional overflights using additional equipment (such as gamma spectroscopy and magnetic field mapping) may be conducted subject to the agreement of the inspected State Party (par. 73). The analysis of samples shall take place on-site as much as possible; 'off-site' analysis shall take place in at least two designated laboratories, that have been certified by the D-G (par. 102-103).

786 See Protocol Part II, par. 109. Both the Head of the inspection team and the Representative of the inspected State shall sign the inspection document. Note that at this stage of the inspection, the CTBT does not yet speak of the inspection 'report' but instead refers to the
inspection reports (see Art. IV(62)). Such reports shall contain, *inter alia*, the factual findings of the inspection team relevant to the purpose of the inspection; an account of the co-operation granted during the OSI; a factual description of the extent of the access granted, including the alternative means provided to the team during the OSI. It is made explicit that differing observations may be attached to the report, thereby acknowledging the possibility that consensus among the inspectors of the team may not be reached. The D-G shall make draft inspection reports available to the inspected State Party, which shall have the right to provide the D-G within 48 hours with its comments and explanations and to identify any information and data which, in its view, are not related to the purpose of the inspection and should not be circulated outside the TS. It is noticeable that the D-G is under the obligation to incorporate the proposals for changes to the draft inspection report wherever possible (See Art. IV(63)). This is yet another indication that in the CTBT the right to conduct OSI is dealt with in a most balanced and cautious manner.

4.2.2 Stage 2 of the verification process: review

Art. II(5) of the CTBT incorporates a general obligation of the States Parties to co-operate with the CTBTO in the exercise of its functions in accordance with the treaty. States Parties shall consult, directly among themselves, or through the CTBTO or other appropriate international procedures, including procedures within the framework of the UN and in accordance with its Charter, on any matter which may be raised relating to the object and purpose, or the implementation of the provisions, of the treaty. This very broad provision, which has almost no restrictions as to its applicability, can *inter alia* be made use of as soon as certain information, for example data obtained by the use of NTMs, has raised concerns in regard to other States-Parties’ compliance. The States Parties are thus at liberty to review any suspicious behaviour among themselves or in the fora of their choice, in order to resolve the concerns about compliance. Also during the ‘consultation and clarification’ procedure, apart from obtaining additional facts, review of the overall behaviour of the State Party concerned will take place with a view to resolve the concerns raised. This loosely institutionalised procedure bears many features of diplomatic supervision. Review after institutionalised fact-finding by way of the conduct of OSI starts when the EC shall review the inspection report and (if applicable) any results from sample analysis in designated laboratories, relevant data from the IMS, the assessments of the requesting and inspected States Parties, as well as other information that the D-G deems relevant (Art. IV(64-65)). On this basis, the EC shall address concerns as to whether any non-compliance
document’. Within 24 hours after the conclusion of the inspection, the meeting of the inspection team and the representative of the State shall be completed.
with the treaty has occurred, and whether the right to request an OSI has been abused.

4.2.3 Stage 3 of the verification process: assessment

As mentioned before, an assessment regarding compliance cannot be solely based on the data gathered and processed during the phase of monitoring. Of course a State Party may conclude as a result of ‘diplomatic’ supervision (e.g. after bilateral consultations in line with Art. II(5)) that its concerns with regard to treaty compliance have been resolved. However, in the institutionalised variant, the organs of the CTBTO have a task in this respect. If after an OSI has been conducted the EC reaches the conclusion, in keeping with its powers and functions, that further action may be necessary with regard to non-compliance issues or issues of abuse of the right to request an OSI, it shall take the appropriate measures in accordance with Art. V ('measures to redress a situation and to ensure compliance, including sanctions').

4.3 Provisions on dispute settlement in the CTBT

The aforementioned broad Art. II(5) offers a legal basis for consultations as a first step in non-judicial dispute settlement, applicable to any matter which may be raised relating to the object and purpose and the implementation of the CTBT. The provisions have not been further elaborated, but the explicit mentioning in Art. II(5) of ‘the UN and its Charter’ imply that States Parties may make use of all non-judicial techniques as provided for in Art. 33(1) of the Charter, including resort to regional agencies or arrangements, to arrive at the settlement of the dispute. Art. VI of the CTBT offers similar procedures for dispute settlement, albeit with regard to disputes concerning the application or the interpretation of the treaty. This latter, specific article on dispute settlement of the CTBT, is almost identical to Art. XIV of the CWC (see supra). With regard to the ‘institutionalised’ procedure, the only difference is that in the CTBT the EC, in contributing to the settlement of a dispute, is explicitly allowed to ‘bring the matter to the attention of the CSP’ (VI(3)).

It is truly remarkable, that two treaties (the CTBT and the CWC) with related, but not identical subjects, quite divergent substantive obligations and in many respects completely different verification mechanisms, offer

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787 See again Protocol Part I, par. 18: “the IDC data shall be without prejudice to the final judgement with regard to the nature of any event, which shall remain the responsibility of the States Parties (...)

788 Two other ‘differences’ relate to article numbers. Art. VI(4) of the CTBT explicitly empowers the CSP to establish a subsidiary organ for the purpose of settling disputes in accordance with Art. II (26(j)), and Art. VI(6) provides that Art. VI is without prejudice to articles IV and V of the CTBT (verification and correction/enforcement).
almost exactly the same provisions for dispute settlement. Then again, the application of the provisions on dispute settlement is without prejudice to the (treaty-specific) provisions on the process of verification and the provisions of correction/enforcement (VI(6)).

4.4 Provisions on correction/enforcement in the CTBT

A ‘familiar’ internal sanction striking a member of the CTBTO which is in arrears in the payment of its assessed contribution to the Organisation can be found in Art. II(11). Such member shall have no vote in the Organisation (that is, in all of its organs) if the amount of its arrears equals or exceeds the amount due for two full years. The CSP may nevertheless permit such a member to vote if according to the CSP the failure to pay is due to conditions beyond the control of the member. In the context of OSI, in case an OSI request is not approved or the OSI is terminated by the EC on the basis that the request is abusive or frivolous, the EC has the power to implement appropriate measures to redress the situation, including requiring the requesting State Party to pay for the cost of any preparations made by the TS, suspending the right of the requesting State Party to request an OSI for a period of time as determined by the EC, and suspending the right of the requesting State Party to serve on the EC for a period of time (see Art. IV(67)). These internal sanctions are meant to ensure respect for the right to request OSI (by deterring abuse).

Art. V of the CTBT is about measures to redress a situation and to ensure compliance, including sanctions. The CSP shall take the necessary measures, as set forth in par. 2 and 3, to ensure compliance with the treaty and to redress and remedy any situation which contravenes the provisions of the treaty (V(1)). In cases where a State Party has been requested by the CSP or the EC to redress a situation raising problems with regard to its compliance and fails to fulfil the request within the specified time, the CSP may, inter alia, decide to restrict or suspend the State Party from the exercise of its rights and privileges under the treaty (V(2)). This already strong internal sanction is further strengthened by the fact that it is bound to remain in force ‘until the CSP decides otherwise’.

In cases where damage to the object and purpose of the CTBT may result from non-compliance with the basic obligations of the treaty, the CSP may recommend to States Parties collective measures which are in conformity with international law (V(3)). Contrary to the CWC, the CTBT explicitly links damage to the object and purpose of the treaty to non-compliance with

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789 In taking these measures, the CSP shall take into account, inter alia, the recommendations of the EC (V(1)). See also Art. II(26(g)).

790 A similar sanction appears in the CWC, but then it will last until the State Party concerned ‘undertakes the necessary action to conform with its obligations under the CWC’ (Art. XII(2) CWC).
its Art. I ('basic obligations'). However, non-compliance with Art. I apparently does not automatically damage the object and purpose of the CTBT ('may result'); furthermore, it is up to the CSP to make (non-binding) recommendations to the States Parties on collective measures. Also in the CTBT the 'coping-stone' of the phase of correction/enforcement is found outside the treaty system. The CSP, or alternatively, if the case is urgent, the EC, may bring the issue, including relevant information and conclusions, to the attention of the UN (V(4)). Unlike the CWC, the final text of the CTBT does not specify which organs of the UN are to be addressed. It is however obvious that the UNGA and the UNSC come into the picture (in the draft text of the CTBT of April 1996 both UN organs were still mentioned as such), either one of them or both of them at the same time (since Art. V(4) does not place any restrictions on the CSP's or EC's right to refer issues to the UN).

4.5 The interpretative element in the CTBT

It can be expected that the interpretative element in the CTBT will come to the fore in those instances where consultations have been provided for in the treaty-provisions. The procedures providing for 'dispute settlement', 'consultation and clarification', the 'confidence-building measures' and more general provisions like Art. II(5) referring to consultations in the context of the obligation of the States Parties to co-operate with the CTBTO, all bear in them opportunities for the interpretation and further specification of treaty provisions. It goes without saying that the organs of the CTBTO can only contribute to the interpretative element if and when States Parties having a dispute choose to make use of institutionalised proceedings. If States Parties choose to resolve disputes inter se (which resembles 'diplomatic' supervision), the interpretative element will be less apparent.

As always, the plenary organ of the supervising organisation in which all States Parties have representatives, the CSP of the CTBTO, is most suited to contribute to the interpretative element. As mentioned, the CSP has as one of its functions to consider and review scientific and technological developments that could affect the operation of the treaty. As compared to the CWC and the IAEA safeguards system, the CTBT contains not many specific definitions (probably to avoid circumvention of prohibitions), which means that also in that respect there might be a task for the organs of the CTBTO. Finally, also in the CTBT provision has been made for the convocation of a Review Conference to review the operation and effectiveness of the treaty with a view to assuring that the objectives and
purposes in the Preamble and the provisions of the treaty are being realised (Art. VIII(1)).

ii. Concluding remarks

The treaties examined in this chapter all establish special international organisations with supervisory tasks, having at their disposal an international inspectorate and staff enjoying functional privileges and immunities. All of the treaties furthermore implement confidentiality regimes, of which the CWC has the most elaborate by far (including a separate body for dispute settlement in confidentiality issues). The CWC is also the first arms control treaty that endeavours to eliminate altogether a type of weapons that can be considered militarily useful under certain circumstances. The comprehensive scope of the substantive obligations (of conduct and of result) in the CWC, in connection with the problem of dual use of chemicals and the resulting legitimate interests of States to protect confidential (business) information, all account for the immense body of procedural and institutional law of the CWC. Furthermore, the supervisory mechanism of the CWC not only focuses on materials (chemicals), but also separately on (the control and destruction of) facilities. The inherent weakness of any system that, like the system of the CWC, relies on declarations by the States Parties is to a considerable extent remedied by the extensive regulations on systematic verification, primarily carried out by way of various ‘routine’ on-site inspections of declared sites and facilities and confirmation of the States Parties’ declarations by the OPCW. Challenge inspections can be carried out by the OPCW inspectorate at the States Parties’ request. The large number of methods and related procedures available for fact-finding (in both the phases of monitoring and verification) stand in sharp contrast to the few provisions on the legal evaluation of the facts found, and the slender phases of dispute settlement and of correction/enforcement.

The IAEA safeguards system was the first global arms control system, providing for a control mechanism directed at ensuring the peaceful uses of nuclear material. The old structure, based on national systems of accountancy for and control of nuclear material, has functioned well over the past thirty years. The IAEA uses routine inspections to verify inter alia the information provided by the member States. The safeguards system is directed at controlling the transfer of nuclear material and hence is more limited in scope than the CWC, which also demands the destruction of

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791 The first Review Conference is scheduled ten years after entry into force of the CTBT and further Review Conferences may take place at intervals of ten years, or less if so decided by the CSP as a matter of substance (Art. VIII(2)).
chemical weapons. Rooted in history as it is, the IAEA safeguards-system
breathes respect for the sovereignty of the member States and attaches
great value to their acceptance of all its elements (as becomes particularly
clear from the provisions on limited access regarding inspections). ‘Special’
(challenge) inspections can be carried out by the IAEA on its own initiative.
The shortcomings of the system that have come to the surface in the cases of
Iraq and the DPRK and that necessitated the IAEA to adapt to the new time-
frame have not been entirely remedied by the Model Additional Protocol
that was adopted in response to these challenges. Even though the Agency
has become somewhat less dependent on the ad hoc co-operation by the
States Parties in the gathering of information, reliance is still to a large
extent on the preparedness of the States to provide full and adequate
declarations. Nevertheless, if the system is strictly complied with the
Agency will be able to recognise much earlier than before if and when a
State is in the process of trying to develop a nuclear weapons-capability; as
such, the Model Additional Protocol could be said to provide for some kind
of ‘early warning’ mechanism.
The drafters of the CTBT have made grateful use of the ‘measurability’ of
the subject matter of the CTBT, viz. nuclear explosions. In contradistinction
to both the IAEA safeguards system and the CWC, the supervisory
mechanism of the CTBT does not have to rely on declarations provided by
individual States Parties. Consequently, there was no need for lengthy
procedures for the verification of State declarations. Instead, most fact-
finding takes place by the constant gathering as well as the routine
processing and analysis of relevant data in the IMS, which has been
conferred on the supervisory organisation, the CTBTO (more specifically,
the IDC of the TS). Thanks to this institutional design, these data are
accessible to all States Parties, which is important for the CTBT to be
successful as a political instrument. In addition, the method of OSI, which
occupies an important place in the CWC and in the IAEA safeguards system
as an independent fact-finding method, is more of a ‘last resort’ character in
the CTBT and is only available in some kind of ‘challenge’ form. Unlike the
CWC and the safeguards system, no organ seems to have the power to make
a formal assessment in the CTBT concerning (non-) compliance with the
basic obligations of the treaty. The provisions on dispute settlement and on
correction/enforcement of the CTBT are almost identical in substance to
those of the CWC.