

**CHEMICAL INDUSTRY INSPECTIONS UNDER THE  
CHEMICAL WEAPONS CONVENTION JOHN HART**

# verification**matters**

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<b>Acknowledgements</b> .....	5
<b>Introduction</b> .....	7
<b>Chemical industry inspections</b> .....	9
<i>Inspection procedures</i> .....	9
<i>Right of access</i> .....	11
<i>On-site activities</i> .....	12
<i>Contribution of OSI activities to the final compliance assessment</i> .....	13
<i>Completion of inspection and final assessment</i> .....	13
<b>Types of osis under the cwc</b> .....	14
<i>Initial inspections</i> .....	14
<i>Systematic inspections</i> .....	14
<i>Challenge inspections</i> .....	15
<b>Implementation of on-site inspections</b> .....	19
<b>Outstanding implementation problems</b> .....	20
<i>Inconsistency of data</i> .....	20
<i>Degree of access to facilities and plant sites</i> .....	22
<i>Access to records</i> .....	23
<i>Copying inspectors' notebooks</i> .....	23
<i>Acquisition and use of information</i> .....	24
<i>Protection of confidential business information</i> .....	25
<i>Sampling</i> .....	25
<i>Approved equipment list</i> .....	27

<b>Issues of concern</b> .....	29
<i>Increasing 'unresolved uncertainties'</i> .....	29
<i>Attempts to redefine key terminology</i> .....	30
<i>Maintaining the competence of the Secretariat</i> .....	30
<i>Funding of inspections</i> .....	31
<i>Frequency of inspections and quantitative risk assessment</i> .....	32
<b>Conclusion</b> .....	35
<b>Annex one</b> .....	37
<i>CWC prohibitions and chemical industry declaration requirements</i> .....	37
<b>Annex two</b> .....	41
<b>Frequency of inspection and analysis of risk</b> .....	41
<i>Schedule 1 facilities</i> .....	41
<i>Schedule 2 plant sites</i> .....	41
<i>Schedule 3 plant sites</i> .....	44
<i>DOC/PSF plant sites</i> .....	45
<b>Endnotes</b> .....	47

## **Acknowledgements**

There are a number of difficulties in preparing a report such as this. First, there are literally several hundred discrete policy issues to be considered. Second, outsiders can find it hard to discern the daily operations of the Organization for the Prohibition of Chemical Weapons, partly because of its efforts to minimise the possibility of sensitive information being disclosed. Some of the information is ‘confidential business information’ obtained during inspections of the chemical industry. Some of it is considered sensitive for political or institutional reasons. Finally, people and organisations involved in implementing the Chemical Weapons Convention have different views about what is or is not occurring.

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## Introduction

On-site inspections (OSIs) are one of the principal means for verifying state party compliance with the 1993 Convention on the Prohibition of the Development, Production, Stockpiling and Use of Chemical Weapons and on Their Destruction (CWC).<sup>1</sup> The purpose of OSIs is to detect evidence of non-compliance, add to the deterrent effect of the verification system as a whole and enhance confidence that the treaty is being implemented effectively. There are two ways in which the chemical industry can be subject to OSIs under the CWC.<sup>2</sup> One is if the industry produces chemicals listed in the three 'schedules' of the treaty's Annex on Chemicals, covering approximately 20,000 substances that are believed to have relevance to chemical weapon (CW) production.<sup>3</sup> States parties are required to provide regularly a range of information on 'facilities' or 'plant sites' that produce, consume or handle Scheduled chemicals. They must also declare whether they possess CW, CW production facilities or CW storage facilities. The other is through the application of the 'general purpose criterion', which is meant to capture any chemicals not listed in the Annex by banning the development, production and stockpiling of *all* chemicals except for legitimate, peaceful purposes.<sup>4</sup> Under this criterion, all chemical industry may, in principle, be subject to inspection to ensure that prohibited activities are not occurring. States parties are obliged to take steps to apply the criterion.<sup>5</sup> If one or more states parties believe an unlisted chemical needs to be covered, they can seek agreement from the other states parties to have the Annex on Chemicals amended or, if appropriate, they can request a challenge inspection.

Thus far, however, chemical industry osis have been based entirely on so-called Schedule 1, 2 or 3 chemicals, listed in the Annex on Chemicals, and certain unscheduled discrete organic compounds, some of which may contain phosphorus, sulphur or fluorine (DOC/PSF) and which are regarded as relevant to CW production.<sup>6</sup> The unwillingness of states parties to extend the scope of chemicals subject to systematic inspection reflects a desire to limit the regime's scope in order to minimise cost and intrusiveness, as well as a lack of credible information that a party is using unscheduled chemicals for non-peaceful purposes.

OSIs are carried out by a professional cadre of inspectors employed by the Organization for the Prohibition of Chemical Weapons (OPCW), which monitors and verifies compliance with the CWC. Based in The Hague, Netherlands, it consists of three organs: the Conference of the States Parties (CSP), the Executive Council (EC), and the Technical Secretariat (hereinafter the 'Secretariat'). The CSP is the OPCW's decision-making body, and it meets in regular session once a year. Its duties include appointing the Director-General and approving the annual budget. Any major, unresolved compliance concerns are eventually forwarded to the CSP. The EC, for its part, convenes in regular session four-to-five times a year, deliberates specific implementation matters and prepares recommendations for consideration and possible adoption by the CSP. Finally, the Secretariat is responsible for implementing CWC provisions, including OSIs.

Some of the principal issues affecting chemical industry inspections are: the handling and processing of information derived from state party declarations, as well as data derived from national technical means (NTM)<sup>7</sup> and open-source literature; the degree of on-site access permitted to inspection teams; the frequency of inspections and the 'risk' posed by different types of 'facilities' and 'plant sites' to the CWC; and key OSI procedures and implementation issues, including sampling and the selection and use of approved equipment and procedures for possible challenge inspections.

There is an inherent tension that invariably affects the conduct of chemical industry inspections. On the one hand, OSIs need to be effective and efficient and the frequency of inspections needs to be set accordingly. Inspections must encompass enough of the chemical industry in each state party to provide assurance that prohibited activities are not occurring. On the other hand, industry naturally wishes to restrict the scope and intrusiveness of inspections in order to protect confidential business information (CBI). States, to varying degrees, also interpret guidelines and principles in order to restrict the scope of the treaty, both to assist their industry in its desire to protect CBI and to protect state secrets. Equally important, there are costs to industry associated with the time that inspected facilities must devote to hosting inspections and with the amount of paperwork that states parties must process. These costs are partly determined by the size of the inspection teams and by the frequency of inspections at different facilities.

## **Chemical industry inspections**

The OPCW currently employs about 200 inspectors, who are full-time employees of the Secretariat and form the bulk of the Inspectorate Division. This body handles operational matters directly related to the conduct of inspections. The Verification Division, meanwhile, processes declarations and manages technical and political issues emanating from the inspections.

### *Inspection procedures*

The OPCW's Standard Operating Procedure (SOP) informs the planning and conduct of all OSIs, including the designation of inspection team members, their privileges and immunities, standing arrangements such as the designation of one or more points of entry (POE) through which inspection teams are authorised to enter the state party, use of approved equipment and inspection activities. The SOP also contains

formats for every type of information exchange between the Secretariat and states parties. When the Secretariat plans to inspect a given facility, for example, it provides the state party with information, such as the numbers of inspectors and approximate time of arrival of the inspection team at the POE, using the draft 'notification of inspection' format contained in the SOP. The state party has one hour in which to respond if it envisages any difficulties in receiving the inspection. Aspects of the inspection, such as exact timing, may be modified to meet exigencies. Otherwise the inspection proceeds according to plan. The Secretariat then provides the inspected state party with the precise time of arrival of the inspection team. In the case of systematic inspections, inspection teams travel on regularly scheduled commercial flights from Amsterdam's Schipol airport. During a challenge inspection or an investigation of alleged use of CW, however, an inspection team would almost certainly use a chartered aircraft along with a standing diplomatic clearance number for non-scheduled aircraft in order to allow the plane to enter a state party's air space safely. Unlike systematic inspections, states parties must accept challenge inspections within the timeframes specified in the CWC.

A typical OPCW industry inspection team consists of four-to-five persons. Once the team has arrived at the POE, the inspected state party must transport the team and its equipment and supplies to the inspection site within 12 hours. Prior to leaving the POE, the state party's 'host team' may examine the inspection team's equipment. On arrival at the site, an industry representative provides the team with a pre-inspection briefing. Based on this consultation, the team devises an inspection plan. Interaction between the OPCW and the inspected state party formally takes place between the heads of the inspection team and the host team, respectively. In some states parties, the interaction between the inspection team and the inspected state party is carried out strictly between these two representatives. During inspections in other states parties, by contrast, interaction may take place directly between inspection team members and facility representatives.

### *Right of access*

An inspection team's right of access to a state party's territory and facilities is not unlimited. Access is managed in two ways. First is through the application of the provisions of the CWC as a whole, including the detailed timeframes for carrying out challenge inspections set out in the treaty's Verification Annex. Second, in cases where access is disputed, 'managed access procedures' may be invoked.

Access is restricted by the treaty as a whole because chemical industry OSIs are designed only to confirm the consistency of information contained in a member state's declarations. This is achieved by ascertaining the nature of the 'facility' or the 'plant site', and determining whether declared and/or undeclared chemicals have been diverted for prohibited purposes. Teams conducting systematic inspections do not attempt to prove the absence of undeclared chemicals, but rather look to confirm the contents of the declaration. This limits the intrusiveness of the inspection. Any inconsistencies can be clarified either on-site or during the preparation of the Final Inspection Report (FIR), which takes place at OPCW headquarters after the inspection team has returned.

Degree of access also varies according to the type of inspection being conducted. Inspection access is, for example, regulated for Schedule 1 facilities and Schedule 2 plant sites by 'facility agreements'. This is the main method by which inspection team access is managed in practice, and may be necessary in order to conduct inspections without violating domestic laws prohibiting unreasonable searches and searches without warrants. These agreements are signed by the Director-General and a state party representative, such as the head of the national delegation or 'national authority' (the national body that implements the CWC). They include: a preamble that gives the facility's name and address; general CWC provisions relating to approved inspection equipment and its use; specific health and safety procedures; and arrangements to protect confidential information. They also indicate the facility's normal working hours, as systematic inspections of the chemical industry are only carried out during those times.

Managing access is necessary to protect CBI, which, in turn, is dealt with through, *inter alia*, the development of sound facility agreements, reasoned use of clarification procedures,<sup>8</sup> and, where appropriate, managed access techniques. The latter can result in the shrouding of control panels, the turning off of equipment, or the restriction of entry to only an agreed percentage of buildings randomly selected. Managed access techniques are used at any particular facility or plant on the basis of agreement between the inspection team and the inspected state party. They assume greater importance for Schedule 3 and DOC/PSF plants since facility agreements are not generally concluded for them. This is because inspections of such sites are ‘random’ and are therefore too infrequent, and because such sites are subject to a lower level of verification than Schedule 1 facilities and Schedule 2 plant sites.

### *On-site activities*

The inspection team may examine certain production or consumption areas, analyse samples and review written records. Samples may be taken by representatives of the inspected state party under the observation of the inspection team. The inspection team may then conduct its analysis on-site or the sample may be transported off-site to a designated OPCW-approved laboratory. At the end of the inspection, preliminary findings are shown to officials of the inspected state party, allowing an opportunity for comment and discussion. Information considered to be unrelated may be removed by mutual agreement. The facility agreement (if one exists) may also be updated at this time. This may be necessary because a facility or plant may significantly modify its types and methods of production over the course of a single year. In addition, specific OSI-related concerns may be addressed administratively by revising facility agreements. The inspected state party’s representatives may ‘acknowledge’ or ‘take note of’ the preliminary findings. As the team prepares to leave the country, the inspected party may once again check its equipment.

### *Contribution of OSI activities to the final compliance assessment*

Much information about the nature of the facility or plant site can be acquired through physical observation. Initial and routine inspections provide a baseline, and have the added benefit of enhancing the experience and expertise of individual inspectors and of the Secretariat overall. In many cases, judgements by experienced chemical engineers are important in establishing the probability of prohibited actions having taken place. Discovering whether illicit activities are occurring, though, largely rests on calculating the difference between inputs and outputs of chemicals at a given facility or plant site and assessing the likelihood of chemicals being diverted at intermediate stages (for Schedule 1 facilities and Schedule 2 plant sites).<sup>9</sup> Chemical industry inspectors generally are involved in both chemical industry inspections and chemical weapon destruction inspections. This is partly because the presence of chemical industry experts enhances the effectiveness of verification of the latter. Conversely, the presence of chemical weapon experts on industry inspection teams enhances the effectiveness of such inspections. Any specific OSI assessment may have unique elements not foreseen by the general guidelines and principles for conducting inspections. Some degree of flexibility may then be required by both the inspection team and the inspected state party in order to achieve the inspection goals.

### *Completion of inspection and final assessment*

Once the inspection team returns to the Secretariat, the team leader works with a designated planner in the Industry Verification Branch to produce an FIR. The Verification Division handles the rest of the process, which must be completed within 10 days of the end of the mission. The planner prepares a memorandum to the Director-General, highlighting any outstanding issues, and sends the inspected state party a copy of the FIR. Any comments must reach the Director-General no later than 30 days after the inspection is completed. The Director-General may approach the state party in an attempt to resolve

any uncertainties. If unsuccessful, the issue is referred to the EC. Outstanding matters must be resolved before the file can be closed.

## **Types of OSIs under the CWC**

On-site inspections of the chemical industry can be divided into three categories: initial inspections, systematic inspections and challenge inspections.

### *Initial inspections*

Initial inspections are equivalent to baseline inspections in other arms control and disarmament treaties. Under the CWC, the concept of an ‘initial inspection’ applies only to Schedule 1 facilities and Schedule 2 plant sites, since the frequency of inspection of Schedule 3 and DOC/PSF plant sites is ‘random’ and, therefore, too infrequent. These inspections allow the Secretariat to familiarise itself with each site and to acquire much of the information on specific risk factors (for Schedule 2 plant sites only) that will be used in planning subsequent inspections. Such factors include types of process equipment and isolation and safety features. Initial inspections for Schedule 1 facilities and Schedule 2 plant sites are also useful for finalising a facility agreement between the OPCW and a state party.

### *Systematic inspections*

Systematic inspections are carried out, *inter alia*, to verify the destruction and non-diversion of chemical weapon stockpiles held by the states that have declared them, to ensure that declared former production facilities are converted or destroyed in accordance with treaty provisions, and to make certain that dual-use facilities are not engaged in prohibited programmes.

### *Challenge inspections*

A challenge inspection is, politically and technically, the most serious and difficult type of OSI under the CWC. A challenge may be based on information derived from the OPCW itself or from states parties' NTM. It may occur at the request of one or more states parties which believe that another state party is in fundamental violation of the treaty—namely, the development, production, stockpiling or use of CW.

The timeframes for conducting a challenge inspection are detailed and potentially critical to the success of the mission.<sup>10</sup> The Director-General is obliged to acknowledge within one hour the receipt of a request for an inspection, including specific information concerning the site, such as the requested perimeter. He must then inform the EC of the challenge inspection request at least 12 hours before the planned arrival of the inspection team. The EC may, with a three-quarters majority vote, stop the inspection from proceeding (the so-called red light procedure). Unless this occurs the challenged state party is required to transport the inspection team from the officially designated POE to the final perimeter within 24 hours. Discussions to establish an agreed perimeter may continue for up to 24 hours. During any perimeter discussions the inspection team seals all entrances and exits, except for the main entrance, and monitors the perimeter. Although the challenged state party may invoke managed access procedures, including the right to remove sensitive paperwork, log off computer systems and shroud sensitive equipment, responsibility for satisfying compliance concerns lies with the challenged state party. The duration of a challenge inspection may not exceed 84 hours once the final perimeter has been set.

There has been no challenge inspection to date. Although there have been informal allegations and rumours circulated that one or more parties is in violation of the treaty, as far as the OPCW is officially concerned, no states parties are currently under suspicion of fundamentally violating the treaty.<sup>11</sup> There is concern in some quarters that the regime has lost some credibility because no state party has been willing to request a challenge inspection.<sup>12</sup> The information used to back a challenge inspection must,

however, be credible to other states parties. There is a risk that information provided to support a challenge inspection request may be incomplete because the requesting state party might be unwilling to reveal its NTM 'sources and methods'. The information might therefore be insufficient to convince the OPCW membership of the need for any given challenge inspection.

States parties have given conflicting and inconsistent signals (if any) about the likelihood of a challenge inspection ever occurring, partly because governments are hesitant to cast aspersions on treaty compliance by another country. A challenged state party could reciprocate with a challenge inspection request of its own, although the EC and the Director-General are empowered to prevent challenge inspections deemed frivolous or abusive.<sup>13</sup>

Views differ, furthermore, on how and under what circumstances a challenge inspection should be initiated. A number of states parties, like China, feel that they are such a serious undertaking that they should be an option of last resort, especially in view of the political damage they might cause. Other states parties, such as the US, believe that informal consultation and clarification should not be considered a mandatory prerequisite to a challenge inspection, since they may give a violator time to take steps to evade detection. In fact, it seems likely that, if a challenge inspection does take place, the US will initiate it. It has already questioned the veracity or completeness of declarations by other states parties.<sup>14</sup> Until April–May 2000, however, the US was in a relatively weak political position in the OPCW because it had not submitted its own industry declarations.

Some insights into how an actual challenge inspection might be carried out can be found in the results of a practice challenge inspection held at a military facility near Sao Paulo, Brazil, in October 1999.<sup>15</sup> Based on a challenge by a fictitious country, Pangea, the inspection was conducted in 'real time' to maximise its didactic value.<sup>16</sup> The principal problem encountered was that the OPCW team was initially unable to detect the target chemical, thiodiglycol (TDG), a possible sulphur mustard precursor, with its Gas Chroma-

tograph/Mass Spectrograph (GC/MS) detector in either blinded<sup>17</sup> or open mode.<sup>18</sup> It also discovered that the timeframe for moving support equipment with civilian aircraft could not be met over great distances. And negotiations to set the final perimeter and start the 84-hour inspection clock proved difficult.<sup>19</sup> Yet the Secretariat did demonstrate that it could field a team and conduct a challenge inspection.

The Brazilian exercise also underscored the need to explore more fully the politico-psychological dimensions of challenge inspections. This could be done by holding further practice and systematic inspections. The expertise needed to carry out an actual challenge inspection could be acquired from a generalisation of lessons learned, the development of case studies and more practical experience.