

UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND

VERIFICATION OF NON-PRODUCTION OF CHEMICAL WEAPONS

Introduction

1. It has become increasingly clear that the key to agreement on a chemical weapons convention is the elaboration of a sound verification regime which will generate confidence that States Parties are complying with provisions of the convention. The Working Group of the Committee on Disarmament has discussed this question in depth and a great deal of work has been done on the technical procedures which could be used for such verification. These discussions have shown that it would not be practicable to devise verification procedures which would provide an absolute assurance that the convention is not being violated. On the other hand, a chemical weapons convention must provide for sufficient verification to deter the would-be violator and to provide a degree of assurance against violation by one party which is accepted as adequate by others.
2. Five main complementary types of verification for a chemical weapons convention have been suggested:
 - (i) verification of destruction of stocks of chemical weapons;
 - (ii) verification of the destruction of facilities for their production and filling;
 - (iii) monitoring of production of super-toxic chemical agents for permitted purposes;
 - (iv) verification of non-production of chemical weapons;
 - (v) special inspections under the fact-finding procedures, including those conducted in relation to possible violations of all types.

This paper addresses itself to the problem of verification of non-production by regular inspection, i.e. category (iv) above. It would aim to provide confidence through non-discriminatory routine inspections that those chemical warfare agents posing the greatest threat are not being produced in violation of the convention. It would thus lessen the need for special inspections of type (v) above. This paper aims to show that the regime required for this purpose need not be anything like as onerous to the chemical industry as has sometimes been suggested.

3. Attention will be concentrated on a limited list of substances which pose particular problems for the verification of a chemical weapons convention. They comprise a list of named compounds or types of compound which are key precursors of super-toxic chemical agents. Valuable work on the identification of key precursors which might be included in this list has been done in the latest series of Chairman's consultations with experts on technical matters (17 January - 4 February 1983). The illustrative list at annex is designed to show types of compound which might be included in a special category for the purpose of verification of non-production under a chemical weapons convention. This list is

not definitive and is open to discussion. It comprises chemicals which are vital for the production of particularly potent, lethal and incapacitating chemical weapons. Fortunately many of these substances are manufactured in extremely small quantities, if at all. Most of them are probably not produced at all in many countries. The table at annex shows, as far as these are known, civil purposes for which these substances are used and the number of factories known to be producing them in Britain. In order to demonstrate that the inspection of commercial facilities would not be too burdensome, it would be useful to know how many facilities worldwide produce the substances listed at annex. It would be helpful if members of this Committee would furnish corresponding data about their civil chemical industries.

Verification Regime for Key Precursors for Super-Toxic Chemicals

4. To be sure that the substances in the list of key precursors are not being used for the production of chemical weapons, it would be necessary, in the view of the British delegation, to subject the declared facilities which produce these substances to inspection as well as retaining procedures for verifying undeclared facilities. A possible verification regime for a limited number of civil chemical facilities is set out below. In the view of the British delegation, the appropriate verification regime for declared facilities would comprise the following components:

- (a) declarations of facilities producing the chemicals listed at annex, and of facilities designed, constructed or used for such purposes in the past;
- (b) periodic random selection of a number of all such declared facilities for on-site inspections;
- (c) on-site inspection by a team of inspectors under the aegis of the Consultative Committee.

Declarations

5. A requirement should be included in the Declarations section of the Convention for all States Parties to declare any facilities on their territories which produce the substances listed at annex. Those countries failing to make such a declaration or those who submitted a nil return would of course still be subject to special inspections (category (v)). The first such declaration should be made within thirty days of the entry into force of the convention for the State Party concerned, and declarations should be made annually thereafter. The declaration should state the locations of the facilities, which substances are produced at a given facility and the current civil use to which the substances are put. Such information would be submitted to the appropriate body of the Consultative Committee.

Random Inspection

6. The facilities notified to the Consultative Committee in the way described in paragraph 5 above would become subject to random on-site inspection. These facilities would be subjected by the Secretariat of the Consultative Committee to a random selection procedure at intervals determined approximately by the agreed number of inspections. In deciding on the frequency of inspections to be carried out, the Consultative Committee would take into account the number of facilities declared, statistical sampling requirements and chemical engineering data on how much time would be needed to carry out prohibited activities. It is important that the process of selection should be carried out on a random basis, and that each selection should be made from the complete list of facilities, in order to

maximize the deterrent effect of such a system. Thus the fact that an inspection had just been carried out at a particular facility would not exclude another check on that particular facility in the near future if the lot fell on it again. This would discourage States from beginning illegal activities at a facility immediately after an inspection had been carried out on the assumption that that facility was temporarily safe from inspection. The precise timing of the selection of the sites to be inspected would be left to the inspection teams, thus increasing the deterrent effect of the regime.

Inspection Procedures

7. Once a site had been selected for inspection, the inspection should be carried out as soon as possible, since modifications to a facility could be made very quickly to cover up any suspicious circumstances. A period of one week is suggested. Any delay should be satisfactorily explained and a pattern of bureaucratic delays, e.g. refusal to grant entry visas etc., in allowing a team of inspectors to visit a facility would be taken as a prima facie indication that a breach of the Convention had occurred.

8. Inspections carried out in the way described above would be part of an over-all system of routine inspections to ensure implementation of the convention. The organization of inspections and the system of appointment of inspectors would therefore depend on the detailed provisions agreed. In general terms, however, an international inspectorate is envisaged which would involve the appointment of a panel of independent technical inspectors. The inspectors would need to be assisted by a permanent technical secretariat established at an appropriate place. Both the inspectorate and the fixed secretariat would be responsible to the Consultative Committee. The experience of the safeguards regime of the International Atomic Energy Agency might be of value in the establishment of such machinery.

9. The procedures which the inspectors would be permitted to use would need to be set out in general terms in the convention itself or in an annex to it. Within the limits thus laid down, however, it would be desirable for the inspectorate to have scope for the technical development of their own procedures and some latitude for their application under the different conditions prevailing at different facilities. In carrying out their duties the inspectorate would act under the authority of the Consultative Committee, which could from time to time issue guidelines within the authority given to them by the convention.

10. The objectives of on-site inspections would be to ensure:

- (i) that the quantities of a particular substance being produced at the facility under inspection are compatible with the declared use;
- (ii) that any stockpiling is carried out in a manner and quantity compatible with the declared civil use;
- (iii) that the production facilities have not been modified in such a way that any could be used to produce chemical warfare agents.

11. Bearing in mind the purpose of on-site inspection as described above, it is proposed that procedures should be discussed by the Working Group (in particular during consultations with technical experts) under the following headings:

- (a) examination of production for the facility concerned;
- (b) visual observation at the site, both inside and outside the production facility, to detect unnecessary stockpiling facilities, munition filling facilities, over-specialized safety equipment etc.;
- (c) engineering inspections to ensure that the production line is compatible with the production of the declared substance.

Dual Purpose Chemicals

12. The previous sections have been concerned with precursors for supertoxic chemicals. Most of these precursors are not usually produced in large quantities in civil industries and are typically produced at a small number of sites. There are other chemicals, however, which do have a large civilian use and which are also important in chemical warfare. Amongst these chemicals are those which are toxic, such as phosgene, hydrogen cyanide, cyanogen chloride, chlorine, etc., which could pose a serious threat to personnel without protection. There are also non-toxic chemicals, such as ethylene and ethylene oxide, which could be precursors for mustard.

13. Some of the suggestions made previously for the control of precursors could be applied to these bulk chemicals. However perhaps all that is practically possible is that there would be a requirement for a declaration of all facilities producing these chemicals above a pre-arranged quantity together with their civil uses. This is an area where the collection of statistics on a national basis may play an important role. More and more countries are imposing rigorous health and safety regulations on such chemicals and in many countries there are already requirements that industrial companies provide information to their governments on their use. Additionally, for safety reasons, there is an increasing tendency not to store chemicals such as Hydrogen Cyanide but to make and use them immediately. Declaration of facilities producing or storing these chemicals should present no problem.

Effect of On-Site Inspections on Civil Chemical Industry

14. As has often been pointed out in the Committee on Disarmament, it will be important in the establishment of any verification regime for a CW convention to ensure that the civil chemical industry is affected as little as possible. Consultations will therefore be necessary by individual States with their national chemical industries to ensure that the convention does not place an unnecessary burden on them. The inspections proposed in this paper would affect few facilities and are designed to cause as little disruption as possible to the chemical industry. The British Government has been consulting representatives of the British civil chemical industry about the inspection procedures above and its preliminary conclusion is that satisfactory arrangements could be made if a convention were agreed.

Conclusion

15. The above verification regime for non-production of chemical weapons, together with routine inspection of activities such as the destruction of stockpiles and production facilities, should help to create confidence in the implementation of the convention without imposing undue strain on industry, and thus serve to decrease the

need for special inspections. The number of routine inspections would be kept to the minimum and the inspection procedures both simple and confidential; they would not involve intrusion into research activities or into the details of production while still deterring violations of the convention. The British Government will continue its consultations with the British chemical industry on this subject. We hope that other States will also carry out such consultations in the near future. Such action would build confidence by showing the determination to make the necessary effort to reach agreement on a convention.

Table 1

British Production of Key Precursors for Civil Uses

<u>Key Precursors for super toxic lethal chemicals</u>	<u>Number of Companies in United Kingdom producing these Precursors</u>
Phosphorus trichloride (PCl ₃)	1
Phosphorus oxychloride (POCl ₃)	1
Chemicals containing the P-methyl and/or P-ethyl bond	0
Methyl and/or ethyl esters of phosphorous acid	1
3.3 dimethyl butanol-2 (pinacolyl alcohol)	0
N.N disubstituted β - amino ethanol	2
N.N disubstituted β - amino ethane thiol	0
N.N disubstituted β - amino ethyl halides (halide = Cl, Br or I)	1
<u>Key Precursors for other super-toxic chemicals</u>	
Phenyl, alkyl or cycloalkyl substituted glycolic acid 3- or 4-hydroxy piperidine and their derivatives	0*

* = Some small-scale production for pharmaceutical purposes

Table 2

British Civil Uses of Key Precursors

Key Precursor	Purpose
Phosphorous trichloride (PCl ₃)	- (a) phosphorylating agent (b) chlorinating agent to make acid and alkyl halides (c) catalyst (d) to make organic phosphates, germicides and medicinals
Phosphorous oxychloride (POCl ₃)	- (a) chlorinating agent (b) catalyst for dye stuffs and pharmaceuticals (c) petrol additives, plasticizers and organic phosphates
Methyl and/or ethyl esters of phosphorous acid	- (a) flame retardant
N.N disubstituted β - amino ethanol	- (a) water treatment chemical (corrosion control)
N.N disubstituted β - amino ethyl halides	- (a) cationic starch (b) to make filter papers