Preface Rogelio Pfirter

Effective verification is crucial for the successful implementation of any functional international arms control and disarmament agreement. The verification regime of the 1993 Chemical Weapons Convention (CWC) provides for an effective and stringent mechanism designed to maintain confidence in treaty compliance by all of the countries that have either ratified or acceded to the accord. The effectiveness of this regime was recognized by the First Review Conference of the CWC in 2003.

In relation to the cwc, the core objective of verification is achieved through increased transparency, including on-site inspections (OSIS), and the ability to clarify and resolve any compliance concern. For states parties to be prepared to forego the option of arming themselves with chemical weapons (Cw) they need to be able to rely on the protection and security offered to them by the cwc. It is vital, therefore, that the verification system has the capacity to detect any significant act of non-compliance in a timely manner in order to provide such protection and to contribute to the undiminished and progressively enhanced security of states parties, individually and collectively.

Effective verification ensures the stability of the disarmament regime established under the convention. It engages states parties in an active manner, providing them with opportunities to demonstrate their full compliance with the treaty and participate fully in the implementation process. Implementation of the CWC is thus a collective and co-operative undertaking that brings states parties together, underscores common and shared goals, and strengthens the legal regime established under the agreement as well as political support for its institutions. This is more than just a passive 'being inspected' approach; in the words of the CWC, demonstration of compliance is both an obligation and a right.

An efficient verification regime with an emphasis on providing undiminished security for all states parties is a powerful incentive for expanding the membership of the Organisation for the Prohibition of Chemical Weapons (OPCW), especially with respect to countries in regions where the possession of CW may be perceived as an effective means of enhancing national security. Disarmament remains an urgent matter and an important option for improving security.

The OPCW—established by the treaty itself on its entry into force on 29 April 1997—has been working diligently towards establishing and implementing an effective, efficient, non-discriminatory and credible international verification system based on declarations, data monitoring and osis. This objective is recognized by the 164 member states of the OPCW and by the international community at large. In order for the verification system to be implemented (to fulfil the aims of the convention), three main requirements have to be met.

First, verification needs to be technically sound, and based on a good understanding of the science and technology underpinning the provisions of the agreement. A review must be held frequently to take account of new scientific developments that may affect the treaty regime and its verification. In the case of the CWC, such developments were evaluated during the First Review Conference and remain on the agenda of the Executive Council and the OPCW's Scientific Advisory Board. They include progress made in the life sciences, the emergence of new biologically active chemicals with relevance to the CWC, and the introduction of new production technologies and processes in the chemical industry. They also include, however, developments that can make verification more effective, for example in the field of chemical analysis.

Second, the verification system needs to be effective and efficient. The First Review Conference acknowledged the importance of optimizing the verification process, without compromising its stringency or effectiveness, in order to enhance the cwc verification system. Consequently, for some time, the Technical Secretariat of the OPCW and states parties have been actively engaged in a process of identifying and implementing measures to increase the efficiency of the verification system. The size of inspection teams has been reduced considerably, and inspection procedures have been streamlined, particularly at cw destruction facilities where, during active operations, cw destruction is being verified on a continual basis. It remains imperative that all such optimization measures are implemented without compromising the credibility and effectiveness of the verification system.

Third, verification measures need to be implemented in a non-discriminatory and even-handed manner in all states parties. On the one hand, this is a call to the Technical Secretariat to apply the convention's verification provisions in an equal and transparent fashion to all states parties. On the other hand, all states parties are required to implement the convention's provisions at the national level in full and in accordance with common, agreed standards. Only then will they be able to identify and declare to the OPCW all declarable activities and facilities—the starting point for the application of the routine elements of the CWC's verification system.

The close relationship between the quality of national implementation of the convention and the quality of verification was clearly recognized by the First Review Conference. In fact, the issue is even wider: for the ban on chemical weapons to be complete and comprehensive, the CWC needs to become a universal norm for all states. And to be completely effective, all states parties need to implement it in full. Then, and only then, can the verification system established under the CWC contribute fully to confidence-building and regime stability.

The importance of ensuring that these requirements are met is reflected in the main recommendations of the First Review Conference. Two Action Plans (on 'universality' and 'national implementation') were among the strategic decisions reached by participants, and, as touched on above, there was strong support for the optimization of the CWC verification system. This optimization approach finds practical expression in the way in which the OPCW assists new states parties in preparing to meet the requirements of the convention, such as the submission of initial declarations in respect to CW and related facilities and declarable facilities in their chemical industry. This initial assistance is followed up with an intensive programme of implementation support, for example the training of personnel of National Authorities or support in drafting of implementing legislation and regulations. And finally, the optimization approach can be seen in the Secretariat's intensive work with states parties, individually and within the framework of the Executive Council, aimed at further improving the efficient and reliable implementation of the verification measures.

Since 1997, six states parties (Albania, India, Libya, Russia, the United States and one other) have declared CW stockpiles comprising over 71,000 metric tonnes of

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chemical agent, as well as over eight million chemical munitions, devices and containers. More than 12 percent of these toxic agents has been destroyed in an irreversible manner; over 25 percent of the munitions, devices and containers has been rendered unusable. All of these destruction activities have been verified by the OPCW in accordance with the CWC's requirements for stringent international verification. In the first eight months of 2004, four continuously operated and two non-continuously operated CW destruction facilities have been subject to on-site inspections. In the near future, there will be seven facilities that will operate 24 hours per day, seven days a week, and a further four facilities that will function on a non-continuous basis.

The entire production capacity that generated the enormous chemical arsenals declared by the possessor states parties has been deactivated and is currently being eliminated. All of the 64 chemical weapons production facilities (CWPFs), declared by 12 states parties (Bosnia and Herzegovina, China, France, India, Iran, Japan, Libya, Russia, Serbia and Montenegro, United Kingdom, United States and one other) have been subjected to international safeguards by the OPCW. Thirty-three have been certified by the OPCW as having been destroyed, based on the results of OSIS conducted during their destruction. A further 12 have been certified as having been converted to peaceful purposes and remain subject to verification by the OPCW. The remaining 19 CWPFS are awaiting destruction or conversion.

At the same time, more than 700 inspections have taken place to verify treaty compliance in the chemical industry and in other facilities engaged in activities permitted under the treaty and that have been declared to the OPCW, thus enhancing trust among states parties in the legitimate nature of these pursuits. Ninety-eight percent of the world's chemical industry is located in countries that have joined the CWC. The regime has gained the respect and support of the chemical industry and compliance with its stipulations regarding declarations, inspections and transfers is viewed as a responsible and therefore desirable course of action. This has become an intrinsic feature of the International Council of Chemistry Association's Responsible Care programme.

Furthermore, the OPCW has provided technical advice and support to states parties to help them identify all of their declarable facilities in the chemical industry. As a result, the submission of declarations of such facilities has increased by almost

40 percent over recent years, with many more states parties now filing declarations and opening up their facilities to international OSIS.

As of August 2004, OPCW inspectors as a whole have spent over 100,000 days in the field, conducting more than 1,850 inspections at over 750 different sites on the territory of 65 states parties. But these numbers only convey part of the reality of CWC verification. To achieve and maintain a high level of confidence in the CWC regime, verification requires professionalism and specialist experience, dedication and diligence by each state party's National Authority and by the OPCW Inspectorate. The combination of national capacity and independent, international expertise in chemical disarmament is a unique asset and an essential tool in multilateral disarmament.

Simultaneously, the OPCW has maintained and improved its readiness to conduct challenge inspections if so requested, and to investigate any allegations of use of chemical weapons that might be brought to its attention.

A challenge inspection remains the ultimate mechanism under the CWC for establishing the facts in order to resolve a non-compliance concern. It is, of course, noteworthy that no state party as yet has found it necessary to trigger this mechanism. That is not to say that there have been no such concerns. By and large, though, it seems that these have been resolved on a bilateral basis, an important clarification mechanism enshrined in the CWC. That said, the credibility of the CWC's challenge inspection mechanism, its deterrent effect and its reliability as a tool for re-establishing confidence in full treaty compliance, all depend on the conviction of states parties that the OPCW is professionally and procedurally capable of successfully implementing a challenge inspection should it be asked to do so. This is why it is so important to maintain and to demonstrate a high degree of readiness for a challenge inspection, no matter how likely or unlikely a request may appear.

The same can be said for investigations of alleged use. This and other CWC mechanisms have gained additional relevance in light of the association between terrorism and weapons of mass destruction (WMD), a risk that is increasingly recognized by the international community due to the enormous potential for mass casualties. The combined efforts to promote universal adherence to the CWC regime and to ensure that all participating states fully implement the terms of the treaty within their jurisdiction, along with the confidence that the verification system of the OPCW provides in treaty compliance are essential to maximizing the contribution

that the CWC can make to preventing and deterring acts of terrorism involving chemical weapons, and, in the event of an attack, mounting the necessary response.

The cwc's verification system was not designed to preclude cw acquisition by terrorist organizations. Its 'design criteria' were set with the concept of militarily significant quantities in mind, not the gram-to-kilogram quantities that need to be controlled when dealing with the threat of terrorism. Nonetheless, the cwc verification system can supplement national counter-terrorism efforts aimed at preventing access to toxic and precursor chemicals. It can pinpoint weaknesses in national preventive and control measures and identify areas where improvements need to be made and offer suggestions on how to do so. The contribution that the cwc can make in this regard is recognized in United Nations Security Council resolution 1540 of 28 April 2004, which mandates measures that complement the nonproliferation provisions of the cwc and thus reinforces international support for this key convention.

Ever since the CWC entered into force in 1997, the Verification Research, Training and Information Centre (VERTIC) has provided the OPCW with much-valued advice and encouragement, highlighted potential weaknesses in the regime and put forward useful strategies for its consideration. It has significantly expanded the body of academic research on verifiable chemical disarmament. Most notably, VERTIC's report on enhancing implementation of the CWC made an important contribution to the First Review Conference, and many of the practical proposals contained in that study were incorporated into the final documents of the Review Conference. I am delighted, therefore, to have the opportunity to contribute to the *Verification Yearbook 2004*.

VERTIC is an articulate and internationally respected advocate of the role of verification in building confidence in treaty compliance through enhanced transparency checked in an independent manner. Its continuing promotion of the objectives of the CWC, and its support for the effective implementation of its verification regime, add much to the international effort to ensure the complete and perpetual elimination of this category of WMD. The *Verification Yearbook* continues to make a valuable contribution to the further development of the concept of verification. It is highly relevant to our work at the OPCW.

Rogelio Pfirter is Director-General of the Organisation for the Prohibition of Chemical Weapons, The Hague, Netherlands.