

All these techniques need further research, development and testing to develop the proper combination of instruments and inspectors for effective verification.

The objective of monitoring of the process of chemical agents' destruction is to verify that chemical weapons really are being destroyed. It is one of the key issues of the CWC. Use of monitoring instruments is easier since continuous presence of inspectors is envisaged during the whole active destruction phase. Accordingly, process gas chromatographs can be applied to process monitoring.

The quantities can be verified by counting and weighing the munitions and storage tanks before and after draining. The identity can be verified by the chromatographic and spectrometric methods. The readings from the monitoring equipment may be certified by taking samples and analyzing them with a mass spectrometer or an infrared spectrometer.

G. Seals, surveillance and containment

Tags, seals, containment and surveillance techniques supporting the requirements of the international atomic energy agency (IAEA) have been developed and tested by a number of laboratories as a component of their IAEA support programs. Because the IAEA requirements that encouraged system development are similar to those of the chemical weapons convention (CW) but have technical differences, adaptation will be required. In some cases expense and the enormous size and dispersion of the collective chemical stockpiles may make the systems impractical for CWC requirements. Nonetheless, they provide point of departure for development of tags, seals, containment and surveillance equipment crucial for a verification of chemical weapons disarmament. These systems have been exhaustively tested, rigorously challenged for counterfeiting and spoofability, reliability over protracted, unattended periods and have been turned over to commercial interests for manufacture and supply in quantity. Thus their adaptation to CWC needs can be accomplished at substantial savings in development costs to the Technical Secretariat and/or cooperating states parties.

The unequivocal permanent identification of declared chemical weapons stockpiles and production facilities is a critical first step in verification of the eventual destruction of chemical munitions and manufacturing capability. On-site inspection requires tagging of declared items either as individual units or groups of items as appropriate. The identity of the units and the groups must be