

6

Prospects for a Chemical Weapons Disarmament Treaty

Matthew Meselson

After 20 years of discussion and negotiation in Geneva in the 40-nation Conference on Disarmament and its predecessor bodies, recent developments may result in a chemical disarmament treaty ready for signing within a year or two. Chief among these developments are Soviet acceptance of U.S. verification concepts, increased international concern with proliferation, and the support of President Bush.

The emerging Chemical Weapons Convention bans the development, production, possession, and transfer of chemical weapons, under a system of international onsite verification. Antichemical protective activities and equipment, such as gas masks, are permitted.

Three categories of chemical warfare agents are stocked by the United States and the USSR: the highly lethal organophosphorus nerve agents, first produced but not used by Germany during World War II; blister agents dating from World War I; and an irritant or riot-control agent introduced in the 1950s. Iraq, the only other nation that admits having chemical weapons, used blister and probably nerve agents in the Gulf War. According to recent congressional testimony by the director of

Published in:

Challenges for the 1990s for Arms Control and International Security

National Academy of Sciences, Washington, DC, 1989

Central Intelligence, as many as 20 countries may be developing chemical weapons.

Under common meteorological conditions, approximately 1 ton of nerve agent or approximately 10 tons of blister agent is sufficient to cause heavy casualties to unprotected personnel within a square kilometer and additional casualties downwind. The delivery of 1 ton of nerve agent by 155-millimeter artillery, for example, would require firing some 300 projectiles. This makes nerve agents competitive with or superior to conventional high-explosive munitions for the attack of troops lacking anti-chemical protection.

The situation is reversed, however, if the target personnel are wearing gas masks and protective clothing. Soldiers wearing such protective gear are far less vulnerable to chemicals than they are to conventional high-explosive and flame weapons. For direct casualty production, therefore, it would generally be wasteful of effort and ammunition to deploy and deliver chemicals rather than conventional munitions. And, of course, chemical weapons cannot directly disable or destroy tanks, other combat vehicles, artillery, or other equipment or installations.

Instead of casualty production, the principal effect of chemical weapons against troops wearing antichemical protection is to slow them down and reduce their efficiency. At high work rates in hot weather, the retention of body heat imposed by the suit, mask, and gloves forces the wearer to limit heavy exertion to short intervals or else to partly open the protective clothing. Even in cool weather the wearing of a mask and gloves causes some impairment of vision, speech intelligibility, and dexterity.

The issue relevant to evaluating the combat utility of chemical weapons against an adversary with good antichemical protection and training is the degree to which one's use of chemical weapons degrades the combat effectiveness of the other side by causing him to enter or intensify an anti-chemical protective posture. This is difficult to assess realistically. Degradation is substantial for dismounted troops strenuously engaged in hot weather or for units poorly trained to operate in antichemical protection. In contrast, field exercises with well-trained personnel in temperate weather show little degradation of unit mission performance.

A serious concern in the combat use of chemical weapons is the hazard to unprotected civilians downwind of target areas. Depending on meteorological, terrain, and other factors, one may calculate, for example, that

PROSPECTS FOR A CHEMICAL WEAPONS DISARMAMENT TREATY

unless provided with masks or protective shelters, hundreds of thousands or millions of civilians could be killed in a few days of general nerve gas operations in a region with a population distribution like that of Central Europe. A further concern, heightened by the continued proliferation of chemical weapons and their use in the Gulf War, is the threat they could pose to civilians as weapons of terror.

The objective of the Chemical Weapons Convention being negotiated in Geneva is to replace the present situation in which there is no international prohibition against possession of chemical weapons and in which an increasing number of nations have or are seeking such weapons with an effective global ban. The convention is now in an advanced phase of negotiation. There is general agreement on most of the major conceptual issues and on many of the technical details, as reflected in a "rolling text" of the draft convention of some 100 pages.

The convention will be implemented by a permanent Organization for the Prohibition of Chemical Weapons, somewhat like the International Atomic Energy Agency. At the outset of the convention, its states parties must declare to the international organization the precise locations and detailed makeup of their stocks of chemical weapons and agents and the facilities for their production, development, and testing. The declared stocks and facilities will then be verified and eliminated according to a prescribed schedule over a period of 10 years.

A primary task of the international organization is to operate a three-tier system of verification. First, its inspectors will inventory and seal all declared stocks and declared chemical weapons production facilities and will monitor their nondiversion and ultimate destruction. Second, the international organization will operate a system of short-notice inspection and data collection intended to verify that chemical weapons are not produced within the chemical industry. Third, as a safety net to deal with suspicious activities and to deter violations, there will be short-notice challenge inspections at the request of a state party, with no right of refusal by the requested state.

Verification of the nonproduction of chemical weapons is facilitated by the fact that there is no substantial peaceful use for any of the most threatening chemical warfare agents, such as the nerve and blister agents, or for the organophosphorus precursors contained in binary nerve agent weapons. The convention prohibits the production of these substances except for small quantities, restricted to research, medical, or protective

purposes. The convention further requires that facilities producing, processing, or consuming more than limited quantities of certain chemicals with peaceful uses that are also key precursors of chemical warfare agents be declared and placed under a system of monitoring and short-notice inspection to verify that such facilities and precursors are not diverted to weapons purposes.

Verification of nonproduction of prohibited substances and nondiversion of key precursors to weapons purposes will be based on examination of plant design and records, on data from tamper-proof monitoring devices, and on chemical analysis of appropriate samples. Such procedures are probably capable of detecting the production or presence of prohibited substances at a facility even if there have been determined cleanup efforts. Actual tests of this expectation, however, are only now under way.

Verification to safeguard against production, stockpiling, and other prohibited activities at undeclared sites and facilities will depend on challenge inspection. Initial detection would depend on national intelligence means and other sources of information, possibly including information that may come into the possession of the international organization. Even uncertain indication of prohibited activities at a particular site could trigger a request by a state party for challenge inspection. In order to form some idea of how large an undeclared chemical stockpile must be to have military significance, it may be noted that unclassified estimates of the U.S. stockpile in Germany, said to be adequate for only a few days of chemical operations by U.S. forces in Europe, place it at some 400–500 tons of nerve agent, contained in about 6,500 tons of munitions, or approximately 100,000 artillery projectiles.

Given the value of short-notice challenge inspection, both in evaluating suspicious activities and as a deterrent to cheating, the United States would probably exercise its challenge inspection rights regularly even in cases where no suspicions exist, in order to keep the political threshold for challenge inspections low and their deterrent effect high. This has been the practice in requests for challenge inspections of troop exercises in Europe under the 1986 Stockholm Agreement on Confidence and Security Building Measures in Europe.

This abbreviated discussion of verification issues may be concluded by emphasizing that while there can be no absolute assurance against prohibited activities, the verification provisions of the convention, together with

PROSPECTS FOR A CHEMICAL WEAPONS DISARMAMENT TREATY

national intelligence means and other sources of information, would create a serious risk of detection and exposure of any substantial violation.

For the United States the principal benefits of the Chemical Weapons Convention are, first, the verified elimination of large stocks in the Soviet Union, which they have declared to total some 50,000 tons of nerve, blister, and irritant agents, in weapons and in bulk. A second substantial benefit would be the creation of a strong international legal and political norm prohibiting chemical weapons, together with a verification regime to deter violations and to combat chemical proliferation.

The principal cost of the convention to the United States is the loss of its present option to have chemical weapons for deterrence and for retaliation in kind, specifically in the defense of Europe. But a number of factors make U.S. chemical weapons of dubious utility for European defense. Soviet forces are well equipped with antichemical protective equipment and well trained in its use. Key NATO allies are reluctant to integrate chemical weapons into overall defense planning and several have formally renounced the option of having or using them. In March the chancellor of the Federal Republic of Germany (FRG), Helmut Kohl, predicted that there will be chemical disarmament, saying, "We will do everything to make these weapons disappear, because we do not need them." By agreement with the FRG, U.S. chemical weapons in Germany, the only U.S. stocks in Europe, although in excellent condition, will soon be withdrawn and will not be replaced.

If the United States forgoes its chemical weapons option as the result of a chemical weapons disarmament treaty, the maintenance of a strong antichemical defense would nevertheless be necessary. Antichemical defense is an essential adjunct to the Chemical Weapons Convention. First, it reduces incentives for cheating. Second, a good defense enhances the effectiveness of verification, by increasing the scale of preparations necessary to achieve military significance. Finally, antichemical defense is a safeguard in case of any actual use of chemical weapons. To protect defensive programs, the Administration would seek and the Congress would undoubtedly mandate a number of safeguards, such as permanent status for the Army Chemical Corps and budget priority for maintaining and improving antichemical defense.

While these and other issues continue to be studied and debated, the prevailing view in the Administration and in the Senate is favorable to a

Chemical Weapons Convention. President Bush has frequently voiced his commitment to the elimination of chemical weapons. In his foreign policy address at the University of Toledo during the presidential campaign, he said, "If I am remembered for anything, it would be this: a complete and total ban on chemical weapons." After the election the President reaffirmed his commitment in his address to the joint session of Congress in February and at the NATO summit in May when he said: "We must achieve a global chemical weapons ban as quickly as possible."

In June, 75 senators, including a majority of both political parties, sent a letter to President Bush declaring their "strong support for your personal commitment to ridding the world of chemical weapons." The Board of Directors of the U.S. Chemical Manufacturers Association, representing nearly the entire U.S. chemical industry, also has declared its support for a chemicals disarmament treaty, and the association is working with the U.S. Government to develop verification procedures and with industry groups in other countries to achieve a common international approach to the problem.

Since the summer of 1987, when the Soviets first agreed to the concept of mandatory challenge inspection, they have seemed genuinely eager to have a verified global ban on chemical weapons. An important test of their priorities, and of U.S. priorities too, will be the outcome of current U.S.-Soviet talks aimed at exchanging detailed information regarding their respective stocks and initiating bilateral inspections, including challenge inspections, even before the convention is signed. The objective is to test procedures and build mutual confidence in the accuracy of declarations, especially because the size given by the Soviet Union for its stockpile has been said by U.S. and British officials to be considerably less than Western intelligence estimates.

An indicator of worldwide attitudes to the convention is the January 1989 Declaration of the Paris Conference on the Prohibition of Chemical Weapons, called by Presidents Reagan and Mitterrand. Although the principal Islamic nations of the Middle East argue for a link between chemical disarmament and progress toward nuclear disarmament in their region, these nations and indeed all of the 149 nations represented at the conference joined in the final declaration calling for urgent efforts to conclude the convention at the earliest date, making no reference to other issues. With the expected admission of Iraq, Israel, Libya, and Syria, nearly all of the confrontation states of the Middle East will be participat-

PROSPECTS FOR A CHEMICAL WEAPONS DISARMAMENT TREATY

ing in the future negotiation of the convention in Geneva, either as original members of the Conference on Disarmament or as observers.

Numerous important issues must be resolved before the convention can be ready for signing. Among these are (1) the rules and safeguards for challenge inspections; (2) the system for selecting facilities for inspection to verify nonproduction of chemical weapons in the chemical industry; (3) the membership of the executive council of the international organization; and (4) provisions to ensure general adherence, particularly of third world nations. While solutions to these and other problems remain to be devised, agreed, and cast into treaty language, the main outlines of the Chemical Weapons Convention are in place and, given sufficient priority by the United States and USSR, a ban on chemical weapons is likely.