United States General Accounting Office

GAO

Report to the Chairman, Legislation and National Security Subcommittee, Committee on Government Operations, House of Representatives

September 1991

ARMS CONTROL

U.S. and International Efforts to Ban Chemical Weapons

144972

RESTRICTED——Not to be released outside the General Accounting Office unless specifically approved by the Office of Congressional Relations.

RELEASED

GAO/NSIAD-91-317

GAO

United States
General Accounting Office
Washington, D.C. 20548

144972

National Security and
International Affairs Division

B-244914

September 30, 1991

The Honorable John Conyers, Jr.
Chairman, Legislation and National
Security Subcommittee
Committee on Government Operations
House of Representatives

Dear Mr. Chairman:

In response to your request, we are providing information on the status of U.S. and multilateral efforts to stop the proliferation of and eventually destroy all chemical weapons. We examined (1) the administration's export control policies and procedures; (2) U.S. coordination with other countries on the control of chemicals and equipment used in making chemical weapons, including U.S. participation in the Australia Group; (3) the progress and obstacles in achieving a multilateral convention to ban the manufacture, stockpiling, and use of chemical weapons; and (4) the implementation of bilateral agreements with the Union of Soviet Socialist Republics (U.S.S.R.) on chemical weapons data exchanges, visits, and weapons destruction.

Background

Chemical weapons are toxic chemical agents disseminated in munitions such as bombs, artillery rounds, rockets, grenades, missiles, and aerial sprays. In war, chemical weapons are used to kill, injure, and harass people but leave intact cities and industrial facilities. Mustard gas and nerve agents are among the most important lethal agents available for military application, and when the latter agents are used, death may occur in a matter of minutes.

The Australia Group,[1] which was formed in 1984 because of concern about the use of chemical weapons in the Iran-Iraq war, seeks to discourage and impede chemical weapons proliferation. It has identified 50 "precursor chemicals"—chemicals used in making toxic chemical agents that also have civilian uses[2] —and harmonized and improved the

[1]The Australia Group comprises the North Atlantic Treaty Organization (NATO) countries of Belgium, Canada, Denmark, France, Germany, Greece, Italy, Luxembourg, the Netherlands, Norway, Portugal, Spain, the United Kingdom, and the United States (Turkey and Iceland are not included) and the countries of Australia, Austria, Ireland, Japan, New Zealand, and Switzerland. The Commission of the European Community is also a member.

[2]For example, thiodiglycol is used to make mustard gas and is also used in photographic developing solutions and ballpoint pen ink.

effectiveness of national export controls on these chemicals. Under the chairmanship of Australia, the Group meets twice a year in Paris. It has no charter or constitution and operates by consensus.

In an effort to achieve a comprehensive solution to chemical weapons proliferation, the 39-member, Geneva-based Conference on Disarmament has conducted negotiations for several years to develop a worldwide convention banning the manufacture, stockpiling, and use of chemical weapons. The current draft of the convention is based on a 1984 U.S. proposal to the Conference.

In support of the Conference, the United States and the U.S.S.R. have negotiated a memorandum of understanding and a bilateral agreement that involve, among other activities, the destruction of each country's chemical weapons.

Results in Brief

In November 1990, the President, in an executive order, directed the appropriate executive agencies to establish enhanced proliferation controls on precursor chemicals, and in December, the National Security Council stated that the United States should take a leadership role in expanding controls on precursor chemicals. As a result, in March 1991, the United States established export controls through worldwide licensing requirements on all 50 precursor chemicals identified by the Australia Group. Export controls were also instituted on related manufacturing equipment and technology.

In May 1991, all member nations agreed to control all 50 precursor chemicals on a worldwide basis by the end of the year. The member nations also agreed, in principle, to initiate controls over production equipment and related technology. In addition, Group members and chemical producing countries that do not belong to the Group meet to discuss concerns about the need to exercise similar controls. At the urging of the Australia Group and the United States, some of these countries have begun to improve their export controls over precursor chemicals. Also, to improve enforcement of export controls, the Group is developing information on enforcement of existing controls by members and other countries.

In May 1991, the President renewed his support of the Chemical Weapons Convention in the Conference on Disarmament and announced that the United States will renounce the right to retaliate with chemical weapons against chemical attack once the treaty enters into force and

will commit itself to unconditional destruction of all chemical stockpiles. While the President's announcement removed one issue that hindered the prospects for achieving a multilateral convention banning chemical weapons, there continue to be unresolved issues. The Conference members need to agree on how "challenge inspections"[3] should be implemented, and a way must be found to ensure that all chemical weapons-capable states ratify the convention. Some chemical weapons-capable states are not expected to ratify the convention as long as their neighbors possess nuclear weapons. The United States has proposed that the convention require signatories to refuse to trade in chemical weapons-related materials with those countries that do not sign the convention.

In June 1990, the United States and the U.S.S.R. formally agreed to destroy most of their chemical weapons within 10 years. However, interim steps for implementation of this agreement have been delayed. For example, both countries have not agreed on inspection procedures, and the Soviets have not yet prepared for the disposition of deactivated chemical weapons facilities.

Appendix I contains details on the status of export controls in the United States and abroad, appendix II covers the multilateral talks, and appendix III discusses progress on the agreements with the U.S.S.R.

Scope and Methodology

Our work was conducted in the United States at the Departments of State, Commerce, and Defense; the Customs Service; and the Arms Control and Disarmament Agency (ACDA). We held discussions with agency personnel, representatives of the Chemical Manufacturers Association, personnel from the Australian Embassy, and the U.S. congressional representative to the Conference on Disarmament. The Central Intelligence Agency would not meet with us to discuss chemical weapons proliferation.

We reviewed export licensing regulations and enforcement procedures, the draft convention of the Conference on Disarmament, the two bilateral chemical weapons agreements with the U.S.S.R., and reports on international conferences, Soviet chemical weapons facilities, discussions on export controls with several countries, and the chemical weapons capabilities of other countries.

[3]A challenge inspection would be used when a member of the convention suspected another member of violating the treaty by using facilities not declared as potential chemical weapons facilities for chemical weapons purposes.

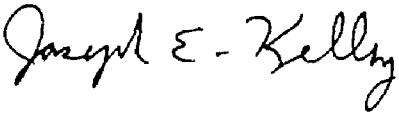
We conducted our review between March 1990 and April 1991 in accordance with generally accepted government auditing standards.

As agreed with your office we did not obtain written agency comments. However, we discussed the draft report with agency officials, and their views were considered in preparing the report.

We plan no further distribution of this report until 5 days from its issue date. At that time copies of the report will be sent to the Secretaries of Defense, State, and Commerce; the Director of ACDA; the Commissioner of Customs; cognizant congressional committees; and other interested parties.

If you or your staff have any questions, I can be reached on (202) 275-4128. Major contributors to this report were Louis H. Zanardi, Assistant Director; Raymond A. Plunkett, Evaluator-in-Charge; and Bob N. Kenyon, Evaluator.

Sincerely yours,



Joseph E. Kelley
Director, Security and International
Relations Issues

Contents

Letter		1
Appendix I Export Controls		8
	Extent of Chemical Weapons Capability	8
	U. S. Renewed Leadership	8
	Licensing and Enforcement Controls	11
Appendix II Conference on Disarmament Negotiations		17
	On-Site Verification	17
	United States No Longer Seeks to Retain Some Chemical Weapons Stocks	19
	Prospects for a Global Convention	20
Appendix III Bilateral Agreements		22
	Memorandum of Understanding	22
	Destruction Agreement	23
Appendix IV Precursor Chemicals Controlled by the Australia Group		25
Appendix V Illegal Exports to Iraq and Iran		27
Tables	Table I.1: Non-NATO/Warsaw Pact Countries With Chemical Weapons Capability	8
	Table V.1: Shipments of Thiodiglycol to Iraq and Iran	28

Abbreviations

ACDA	Arms Control and Disarmament Agency
DOD	Department of Defense
NATO	North Atlantic Treaty Organization
U.S.S.R.	Union of Soviet Socialist Republics

Export Controls

Because precursor chemicals and the necessary production equipment are widely available in the world market, an international consensus on the nature and extent of export controls is needed to stem the proliferation of chemical weapons.

Extent of Chemical Weapons Capability

Although the Australia Group has achieved some success in developing, improving, and harmonizing the export controls of member countries and other countries, the number of countries with confirmed chemical warfare programs has increased from about 5 in 1984 to over 20 today. In March 1991, the Director of Naval Intelligence publicly identified 14 countries outside of NATO and the former Warsaw Pact that currently have an offensive chemical weapons capability. In addition, he reported that 10 more nations may be either developing or seeking an offensive chemical weapons capability. (See table I.1.)

Table I.1: Non-NATO/Warsaw Pact Countries With Chemical Weapons Capability

Probably possess	May possess
China	Indonesia
Egypt	Saudi Arabia
India	South Africa
Iran	Thailand
Iraq	
Israel	(six others not identified by name)
Libya	
Myanmar (Burma)	
North Korea	
Pakistan	
South Korea	
Syria	
Taiwan	
Vietnam	

Source: Director of Naval Intelligence.

U. S. Renewed Leadership

In 1984, the United States and some members of the newly formed Australia Group established licensing controls on the export of several precursor chemicals to Iraq and Iran.[1] The licensing controls were subsequently extended by the United States and other Group members

[1]The United States initially established export controls on five chemicals in April 1984 and added three more in September of that year. Other Western countries established controls on four key precursors that same year.

to include other countries and precursor chemicals. As of May 1989, the Group had identified 50 chemicals as useful in chemical weapons production. For nine of these chemicals (referred to as core chemicals),[2] Group members agreed to impose export controls on a worldwide basis. For the remaining chemicals (referred to as warning list chemicals), some of the participating governments maintained controls, and others shared the list with their chemical industries so that they would exercise caution in selling these chemicals.

As of May 1989, the United States controlled 40 of the 50 chemicals identified by the Group to prevent their export to at least some destinations. Six of the 9 core chemicals were controlled on a worldwide basis, and the remainder were controlled if destined for Iran, Iraq, Syria, and Libya. In December 1989, the United States added licensing controls for selected countries on an additional 10 chemicals, for a total of 50, and added worldwide controls to 3 chemicals, for a total of 9, that were previously controlled only for Iran, Iraq, Syria, and Libya. The Commerce Department stated that with the addition of these controls, the United States was more consistent with the industrial nations that were cooperating multilaterally through the Australia Group to prevent chemical weapons proliferation.

In June 1990, Australia Group members agreed to worldwide controls on a 10th chemical (2-chlorethanol) and a few months later added worldwide controls on another chemical (tri-ethanolamine).[3] In November 1990, the President, in an executive order, directed appropriate executive agencies to establish enhanced proliferation controls on precursor chemicals and stated his goal is to pursue effective multilateral export controls. In early December 1990, the National Security Council stated the United States should take a leadership role in expanding export controls in accordance with the President's executive order. In December 1990, the Australia Group agreed to add worldwide controls on 3 additional chemicals, bringing the total chemicals controlled worldwide to 14 of the 50 identified as useful in making chemical weapons. (See app. IV for a list of the 50 chemicals.)

At that meeting the United States announced it would move to require validated export licenses for all 50 precursor chemicals on a worldwide basis, except to members of the Australia Group and NATO, and urged

[2]Core chemicals are chemicals Group members have agreed to control on a worldwide basis because the chemicals are the more commonly used and sought after precursors for chemical weapons.

[3]The United States effected worldwide controls on the two chemicals in January 1991.

other members to do so. Several countries had previously taken such action, and during the meeting several others agreed to do so. As a result, the United States and 10 other members either had pledged to control or controlled all 50 precursor chemicals on a worldwide basis. Instead of waiting for full Australia Group consensus, the United States effected these controls on March 13, 1991. With that action, the United States put itself in the forefront of controlling precursor chemicals.

At the same time, the U.S. Department of Commerce established licensing controls over chemical manufacturing equipment[4] and technology exports to 28 countries[5] and destinations. Subsequently, in August 1991, the administration established controls on the export of any equipment and services that could aid chemical weapons production. Previously, the United States, in conjunction with the Australia Group, had published guidelines to alert industry to suspicious circumstances suggesting a transaction involving production equipment with potential chemical weapons applications. Germany, however, was the only country that had instituted formal licensing controls over chemical manufacturing equipment.

At a meeting of the Australia Group in May 1991, at the urging of the United States and other countries, the member nations reached a consensus to control all 50 precursor chemicals on a worldwide basis. In addition to the 11 members that had previously pledged or enacted controls on all 50 chemicals, 2 members announced they had extended controls, and 3 members announced they were finalizing their controls on all the chemicals. The remaining 4 countries declared their intent to implement controls on all 50 precursors by the next meeting in December 1991.

In addition, at the May meeting the members reached agreement in principle to adopt export controls on production equipment that has chemical weapons applications. The proposed equipment to be controlled is similar to that recently brought under control by the United States.

[4]Chemical manufacturing equipment includes, for example, certain types of reactor vessels, storage tanks, heat exchanges, distillation columns, and degassing equipment or condensers.

[5]The 28 countries and destinations are Bahrain, Egypt, Iraq, Israel, Jordan, Kuwait, Lebanon, Libya, Oman, Qatar, Saudi Arabia, Syria, the United Arab Emirates, Yemen, Afghanistan, India, Iran, Pakistan, Bulgaria, Myanmar, China, Cuba, North Korea, Romania, the U.S.S.R., Taiwan, Vietnam, and South Africa.

Licensing and Enforcement Controls

United States

The Departments of Commerce and State control U.S. export licensing. The Commerce Department's Bureau of Export Administration, Office of Export Licensing, licenses exports of precursor chemicals under the foreign policy provisions of the Export Administration Act. Licenses are usually granted unless precursor chemicals are to be exported to a country that produces chemical weapons. From March 1989 to about the end of February 1991, 294 applications, valued at about $112 million, were approved. The Department of Commerce issued no denials and returned 10 applications without action.[6] The Department of State's Office of Defense Trade Controls licenses chemical agents such as nerve and mustard gas, antidotes, and protective equipment such as gas masks under the Arms Export Control Act and the International Traffic in Arms Regulations (U.S. Munitions List). U.S. policy is not to export chemical agents to anyone and to review requests for antidotes and protective equipment carefully.

Licensing Procedures

The licensing procedures followed by the Commerce Department's Office of Export Licensing and the State Department's Office of Defense Trade Controls are generally similar. The procedures attempt to ensure that the export items will be used for legitimate purposes and are not destined for proscribed destinations.

When a license application is received it is logged into a computer data base and assigned a case number. The first review of an application for items of concern is automatically done by computer by comparing key words or codes (which may designate destinations or registered munitions exporters, among other things) on the application with computer-based lists. These lists are developed from investigative and intelligence work and usually reflect U.S. policies, such as restrictions on exports to Iraq. If a match occurs, the application is immediately referred to in-house investigative officials for review. Although the application continues to be processed, a license cannot be approved until the review is completed. Commerce conducts this automated "screening" a second time just prior to license approval.

[6]According to Commerce officials, an application is most often returned without action if it is incomplete or if the applicant fails to respond to a request for additional information. Applications withdrawn by the applicant to avoid their denial are also considered returned without action.

After the initial screening, an application's review is assigned to a licensing officer, who refers to appropriate manuals, memorandums, directives, and regulations—such as the munitions list or commodity control list—and reviews precedents to determine whether to approve, disapprove, "staff," or return the application without action. A "staff" action occurs when the licensing officer determines, based on official guidance or judgment, that the application should be referred to other offices or governmental agencies for review. The licensing officer may seek additional investigative or intelligence information when an application raises concerns. In a limited number of cases, U.S. personnel overseas may visit the end user of the export prior to license approval.

Licensing Coordination

The Commerce Department coordinates review of export license applications for precursor chemicals with the Department of State and the U.S. intelligence community. In a November 1990 executive order on chemical and biological weapons proliferation, the President required the Secretary of Commerce to coordinate license applications with the Secretary of Defense. However, as of August 1991 license applications had not been coordinated with the Department of Defense (DOD) because the administrative arrangements for forwarding the licenses had not been completed. Also, an interagency agreement formalized in a National Security Council directive requires DOD, after January 1, 1991, to review all applications for exports destined for Iran, Iraq, Syria, and Libya.

The State Department's Office of East-West Trade, Bureau of Economic Affairs, coordinates State's advisory reviews of Commerce license applications for precursor chemicals. The office refers licenses received from Commerce to State's country, regional, intelligence, and proliferation policy offices and to ACDA. However, the Office of East-West Trade has asked to review only those applications for exports destined for approximately 35 countries of concern for chemical weapons reasons.

State Department officials are currently considering a proposal to consolidate State's advisory reviews of Commerce license applications for precursor chemicals and biological organisms in the Office of Weapons Proliferation Policy, Bureau of Politico-Military Affairs, instead of the Office of East-West Trade. The Office of Weapons Proliferation Policy is currently responsible for advisory reviews of missile technology applications that are controlled by State's Office of Defense Trade Controls and Commerce's Office of Export Licensing.

The State Department's Office of Defense Trade Controls usually refers munitions export applications for chemical protective equipment and

antidotes (chemical agents are not exported) to other offices within State that deal with political and military issues arising from regional, country, and proliferation concerns and to DOD, ACDA, and the intelligence communities.

Enforcement of Export Controls

The Commerce Department's Office of Export Enforcement and the U.S. Customs Service enforce U.S. export laws for precursor chemicals. The Customs Service also enforces export controls for items on the U.S. Munitions List. In 1988, the Customs Service discovered that a precursor chemical used in mustard gas was being illegally shipped to Iran and Iraq. Customs seized 118 tons of the chemical destined for Iran, but six previous shipments totaling 635 tons had reached Iran and Iraq. (See app. V for details on how this occurred.)

Because of a lack of resources and agents with the expertise to identify and deal with potentially toxic chemicals, Customs has conducted virtually no spot checks of dockside chemical containers to ensure compliance with export laws. However, in mid-1990 Customs began a program of surprise physical checks of all dockside cargo at ports that have a high volume of chemical shipments. Some suspicious activities were further investigated. Enforcement activities are also assisted by the exchange of intelligence information between federal agencies, but licensing and enforcement officials place considerable reliance on U.S. exporters to adhere to licensing controls and provide leads on possible violations.

U.S. government enforcement of export controls may be affected by the working relationship between the Customs Service and the Commerce Department. For example, one of several concerns involves the Customs Service's access to export license information controlled by Commerce. A Customs Service report highlighting Export Administration Act issues noted that enforcement could be improved if inspectors had quick dockside access to an electronic data base containing export license information. The Commerce Department has denied such access primarily because of concern that such access may result in the unauthorized disclosure of confidential business information, a concern also expressed by representatives of the Chemical Manufacturer's Association. Commerce does allow Customs limited access to export license information through contacts between their headquarters in Washington, D.C., but Customs officials are concerned about time delays and limited responses. However, Customs and Commerce are discussing the establishment of procedures to allow Customs dockside access to license information.

Additionally, a report by the National Academy of Science in February 1991, Finding Common Ground: U.S. Export Controls in a Changed Global Environment, stated that the Customs Service and Commerce's Office of Export Enforcement have not been able to establish a working mechanism to coordinate enforcement activities. The report stated that the lack of coordination has occasionally resulted in their working on the same case without each other's knowledge. The report recommended that we undertake a study of this and other problems, and we are doing so.

Sanction Legislation

In November 1990, the President vetoed the Chemical and Biological Weapons Control and Warfare Elimination Act of 1990 because of its mandatory sanctions provision.[7] In an executive order, however, the President empowered the Secretary of State to impose trade sanctions against foreign persons who are found to knowingly and materially contribute to chemical and biological warfare weapons proliferation. The order also authorizes economic and trade sanctions against countries that use or are prepared to use chemical weapons. In contrast to the vetoed legislation, the executive order allows exemptions for companies having military contracts with the U.S. government and for significant foreign policy and national security reasons.

In February 1991, the Senate passed the Omnibus Export Amendments Act of 1991, which modifies the sanctions provision vetoed by the President. The act does not allow the President waive sanctions, but it does allow the President to delay the imposition of sanctions against foreign companies guilty of aiding chemical weapons proliferation, pending action by their own governments. As of August 1991, no House action had been taken on the legislation. The administration has not declared its position on the Senate version.

Proposed Changes in Licensing and Enforcement

In its February 1991 report, the National Academy of Sciences recommended that export controls now administered by the Departments of State and Commerce be consolidated in one agency to increase case processing efficiency and to improve procedures for the resolution of disputes. The report also recommended that, instead of creating a new agency, the Department of Commerce's Bureau of Export Administration be reorganized and given this responsibility. Broad policymaking

[7]The bill required the President to impose mandatory sanctions lasting at least 1 year on (1) any country using chemical weapons in violation of international law or against its own citizens and (2) any company that materially contributed to the chemical weapons programs of such countries or U.S.-designated terrorist states. The President considered the requirement inflexible and an imposition on his constitutional responsibility to conduct foreign policy.

and final resolution of dispute would remain the responsibility of the President and appropriate department secretaries.

In a July 1991 report, Strengthening the Export Licensing System, the Committee on Government Operations recommended the creation of a new agency that would issue and administer all export licenses, whether for munitions, dual-use, or nuclear-related items. The committee report also recommended placing all enforcement authority for export controls, including that now exercised by the Department of Commerce, in the U.S. Customs Service.

Australia Group Members

An objective of the Australia Group is to harmonize the licensing controls of member countries to stem the proliferation of chemical weapons. To alleviate some members' concerns that the lack of uniformity in licensing controls and insufficient enforcement have limited the effectiveness of the Group, several significant steps have been taken or are under consideration.

In May 1991, the Group agreed to control all 50 precursor chemicals on a worldwide basis. It also agreed in principle to control chemical production equipment and related technology, but additional discussions are anticipated.

The Group is also focusing more attention on enforcement and is currently developing information on the enforcement of existing controls by members and other countries. At the Group's December 1990 meeting, members started to exchange information on their national enforcement regimes. Additionally, U.S. enforcement personnel briefed the Group on U.S. enforcement procedures, and two countries agreed to prepare a paper elaborating on the basic elements of an effective export control system. The paper, presented at the Group meeting in May 1991, stressed that in order to enforce effectively export controls there is a need for

- expert advice from the government to exporters on whether goods require a license for export,
- customs officials experienced with the production of chemical weapons and technology processes and equipment, and
- close coordination between law enforcement agents and customs officials.

Also, at recent Group meetings, law enforcement and customs officials from several countries met in separate bilateral and multilateral meetings to discuss enforcement.

Non-Australia Group Countries

Group members have held diplomatic discussions with non-member nations with the goal of improving non-members' export laws for precursor chemicals. The United States and other Western countries are concerned that pressing needs for hard currency in Eastern European countries may lead to the export of equipment and material that will be used to produce chemical weapons.

In mid-1990 a U.S. team traveled to Poland, Czechoslovakia, Hungary, Romania, and Yugoslavia to seek their cooperation in stopping the proliferation of chemical and biological weapons and missile technology by improving their export laws. Subsequent to these discussions, the United Kingdom sponsored a conference in London in December 1990, attended by the U.S.S.R., East European countries, and the Australia Group members. These participants discussed export control measures and the specific actions taken by the East European countries. It was noted that several East European nations had taken significant export control measures but that many of the actions were still in the planning stage. For example, Hungary and Poland had the most advanced legislation on controls, and Czechoslovakia had nearly completed preparation of extensive export control regulations.

In addition to Eastern Europe, the United States is concerned about the activities of non-European countries. For example, in 1990, the administration held discussions on export controls with a number of other countries, such as Argentina, Israel, India, and Pakistan. In April 1991 congressional hearings, the Assistant Secretary of State for Politico-Military Affairs expressed concern about China's performance in controlling the export of precursor chemicals and said that discussions on the subject are continuing.

Conference on Disarmament Negotiations

The objective of the Conference on Disarmament's[1] Ad Hoc Committee on Chemical Weapons is to supplement and expand on the 1925 Geneva Protocol, which outlawed the first use, but not the possession, of chemical weapons. The convention being negotiated would ban the development, production, stockpiling, transfer, and use of chemical weapons and would provide for a system of reporting and monitoring, including on-site inspections to verify compliance.

Until recently, two key unresolved issues hindered an agreement on a global chemical weapons convention. One, the retention of a minimum level of chemical weapons stocks, is no longer an issue, since the President announced the United States will not retain or use chemical weapons. The other issue, on-site challenge inspections, has not been resolved but is actively being discussed by the United States within the Conference on Disarmament to try and reach support for the U.S. position before a proposal is formally presented to the Conference. A way must still be found to ensure that all countries capable of producing chemical weapons ratify the convention.

On-Site Verification

A key element to ensuring compliance with the convention is on-site inspection of production facilities. Systematic inspections would be done on facilities declared by the host country as potential chemical weapons producers. These inspections would be referred to as routine inspections. Irregular inspections, called challenge inspections, would be done on any facilities that were suspected of being chemical weapons producers. Under the concept of challenge inspections, a country that suspected another country was not complying with a chemical weapons ban could request international inspectors to conduct an on-site inspection on short notice. Also under consideration are regular, ad hoc inspections of both declared and undeclared production facilities capable of producing chemicals for chemical weapons. Some Conference members, however, believe ad hoc inspections may not be necessary if provisions for challenge inspections are agreed to. No final decision has been made whether ad hoc inspections will be needed.

When then Vice President Bush proposed challenge inspections in 1984, the United States considered it the centerpiece of verification. Over the

[1]Permanent members are Algeria, Argentina, Australia, Belgium, Brazil, Bulgaria, Canada, China, Cuba, Czechoslovakia, Egypt, Ethiopia, Germany, France, Hungary, India, Indonesia, Iran, Italy, Japan, Kenya, Mexico, Mongolia, Morocco, Myanmar, the Netherlands, Nigeria, Pakistan, Peru, Poland, Romania, the U.S.S.R., Sri Lanka, Sweden, the United Kingdom, the United States, Venezuela, Yugoslavia, and Zaire.

years the United States sought to have the inspections accepted by other negotiating countries. As a result of U.S. efforts, most countries, including the U.S.S.R., had accepted the principle of on-site inspections on short notice. Also, representatives of the Chemical Manufacturers Association stated that it was not opposed to challenge inspections. It is, however, concerned about the protection of proprietary business information during the inspections.

Administration Modifies Its Stand on Challenge Inspections

As a result of a policy review in August 1990, the U.S. administration changed its position, stating that challenge inspections should be limited near certain installations for national security reasons. The U.S. delegation did not formally present its new proposal to all the members of the Conference on Disarmament in Geneva because informal discussions with some members of the Conference indicated opposition to the U.S. position on the basis that it would create loopholes for convention violations.

In March 1991, the administration outlined a further revision of its position on challenge inspections. Under the new proposal, an inspection team would have guaranteed access inside the final perimeter of the inspection site. The challenged state and the inspection team would negotiate the extent of access inside the perimeter, but the challenged state would have the final say about the extent of access. The U.S. proposal is conceptually similar to one advanced by the United Kingdom. A major difference is that under the British proposal the challenged state must permit the inspection team access within 48 hours; the U.S. proposal allows 168 hours (7 days).

In preliminary discussions, the United States encountered opposition to elements of the timing of the inspections. Some nations argued that the proposal would allow the challenged state to remove evidence or cover up violations. In July a proposal incorporating the U.S. approach was informally presented to the Conference on Disarmament's Ad Hoc Committee on Chemical Weapons. It was co-sponsored by the United States, the United Kingdom, Australia, and Japan.

Constitutionality of Challenge Inspections

The issue of challenge inspections is complicated by the concern that such inspections could infringe on the Constitution's Fourth Amendment regarding unreasonable search and seizure. However, a study prepared for the Department of Energy in November 1990 concluded that the Fourth Amendment is not applicable to searches by foreign governments

or international organizations. An ACDA official also noted that because inspections would be limited to a specific situation, the search would not be considered unreasonable and thus would not violate the Fourth Amendment. However, he further noted that an actual court case would be needed to definitely determine whether the Fourth Amendment applies to challenge inspections.

United States No Longer Seeks to Retain Some Chemical Weapons Stocks

In May 1991, the President announced that the United States would destroy all its chemical weapons within 10 years of a worldwide ban on chemical weapons—the same time frame as required in the draft convention.

Nearly 2 years ago, the President stated that during the first 8 years of a chemical weapons convention, the United States would destroy 98 percent of its chemical weapons stocks. The other 2 percent would be destroyed within 2 years of all chemical weapons-capable states' signing the convention. The June 1990 bilateral agreement with the Soviet Union further elaborated on this concept: it stated that by the eighth year of the multilateral convention, chemical weapons stocks would not exceed 500 tons of chemical agents. After 8 years, the parties to the multilateral convention would hold a special conference to determine whether participation in the convention would be sufficient for the destruction of all chemical weapons stocks. The United States justified retaining these stocks on the basis of the need to maintain its capability to retaliate if another country were to use chemical weapons and to provide an incentive for others to seriously negotiate a ban on these weapons.

According to the U.S. Mission in Geneva, only the United States and the U.S.S.R. have supported the retention of chemical weapons stocks. It was opposed by the other Western members, who believed it would discourage early agreement to the convention. According to the specially appointed congressional observer to the negotiations, the developing countries also opposed retention. They concluded that allowing retention of chemical weapons would result in a nonproliferation regime that denied them significant weapons capabilities but permitted the United States and other countries to maintain such capabilities.

With the President's May announcement, the retention issue should not be a source of contention. The U.S.S.R. readily agreed with the U.S. proposal to drop the provision pertaining to the destruction of the last 2 percent of chemical weapons.

Prospects for a Global Convention

In May 1991, the President renewed his support for the early successful completion of the convention. He stated that the United States would destroy all chemical weapons and would not use chemical weapons under any circumstances after the convention is effected and would propose that all countries follow suit. In addition, at the President's direction, the U.S. Ambassador to the Conference on Disarmament proposed in May that a target date to conclude the convention be set and recommended that the Conference's Ad Hoc Committee on Chemical Weapons stay in continuous session, if necessary, to meet the target date. In late August, Conference members decided to accept the proposal, although there will be some technical breaks in the session.

We believe the President's actions significantly improve the prospects for a global convention. A number of other issues have not yet been resolved, however. Agreement has not been reached on challenge inspections and on other issues, such as the makeup of the executive council to govern the convention and the identity of chemicals to be banned. Also, even if agreement is reached on the text of a global convention, a major obstacle will remain.

The current text recognizes that to be effective, 60 countries, including all countries that possess chemical weapons or are "chemical-weapons capable,"[2] must ratify the convention before it is effected. This is not likely to happen. U.S. officials and intelligence reports have stated that some chemical weapons-capable countries are not expected to ratify the convention as long as any of their neighbors possess nuclear weapons. This is particularly true in the Middle East, where some countries consider their chemical weapons as deterrents to Israel, a country perceived as possessing nuclear weapons. It is unclear how this issue will be resolved, although an ACDA official believes that it is possible to modify the convention. Also, the President proposed in his May 1991 statement that the convention require countries to refuse to trade in chemical weapons-related materials with those countries refusing to sign the convention.

Estimated Inspection Costs

A report prepared by the Institute for Defense Analyses in June 1990 estimated that inspection costs for all members who sign the chemical weapons convention would amount to $770 million over a 15-year period. The United States would incur $363 million of this cost. The report recognized, however, that the costs would vary greatly,

[2]The convention still needs to define "chemical-weapons capable."

depending on the frequency of inspections and the size of the inspection teams. Also, in August 1991 the United States submitted to the Conference on Disarmament a study on the staffing and cost estimates for a technical secretariat necessary to establish, implement, and monitor a chemical weapons convention. According to the study, costs will depend on several factors, such as alternative verification schemes and the structure of administrative bodies. With this caveat, the study estimated that inspection costs, including continuous presence at chemical weapons destruction sites, might total about $1.35 billion during the first 10 years of treaty operations. The study did not estimate the U.S. portion of the costs.

Bilateral Agreements

The United States and the U.S.S.R. have entered into an interrelated memorandum of understanding and bilateral agreement that support efforts to achieve a multilateral convention to ban chemical weapons. The agreements provide for the exchange of data on chemical weapons, confidence-building measures, on-site verification, the cessation of chemical weapons production, the destruction of most chemical weapons, and the provision of preliminary, general plans for closing and destroying production facilities.

Memorandum of Understanding

On September 23, 1989, the U.S. Secretary of State and the Soviet Foreign Minister signed a memorandum of understanding to facilitate the process of negotiation, signature, and ratification of a comprehensive, effectively verifiable, global convention on the prohibition and destruction of chemical weapons.

The memorandum's first phase, which has been completed, involves the exchange of chemical weapons data and visits to storage, production, and industrial sites. During visits to the U.S.S.R., the United States concluded that the Soviet Union had no facilities available for destroying chemical weapons and that plans and budgets still had to be completed before such facilities could be built.

The second phase provides for the exchange of detailed chemical weapons data and on-site inspections, including up to five challenge inspections of declared storage and production facilities to verify the accuracy of the information exchanged. It also provides for general plans for closing and destroying chemical weapons production facilities under the chemical weapons convention of the Conference on Disarmament. This phase has not begun and, according to the agreement, will not begin until both countries formally and jointly acknowledge the possibility that a multilateral chemical weapons convention could be initialed in 4 months.

Data Exchange

The United States and the U.S.S.R. exchanged chemical weapons data in December 1989. The United States stated that it had 29,000 agent metric tons, and the U.S.S.R. stated it had 40,000 agent metric tons. The U.S.S.R. had previously announced that it stopped chemical weapons production in early 1987, and the United States stopped production of chemical weapons in early 1990.

Visits

In March 1990, the United States and the U.S.S.R. agreed to general guidelines for conducting visits. Since then, each country has visited the other three times. A team of U.S. experts visited the U.S.S.R. to observe chemical weapons storage facilities in June 1990 and January 1991 and a Soviet prototype chemical weapons destruction facility, a bulk storage facility, former production facilities, and industrial production facilities in August 1990. The Soviets visited a chemical weapons storage facility in June 1990; a private chemical plant, a U.S. arsenal where chemical weapons were manufactured, and an Army storage area for chemical weapons in July and August 1990; and chemical manufacturing plants and a chemical weapons destruction facility in February 1991.

From the visits to the U.S.S.R., the U.S. team concluded that the U.S.S.R. cannot demilitarize its stocks using its current facilities and technology without a massive infusion of technology and money. Also, the United States concluded that the Soviet government has significant work to accomplish in planning and carrying out the destruction program.

Costs of Visits

The United States and the U.S.S.R. bear the in-country costs for each other's visits. The U.S. costs are absorbed within the participating agencies' resources based on guidelines established by the Office of Management and Budget. The estimated cost of the three Soviet visits, exclusive of salaries and some other costs, was about $400,000.

Destruction Agreement

On June 1, 1990, the United States and the U.S.S.R. entered into an agreement for the destruction and nonproduction of chemical weapons and measures to facilitate the multilateral convention banning chemical weapons. This agreement will not be implemented until inspection procedures are defined (including the intended disposition of the deactivated chemical weapons facilities) and a revised destruction timetable is agreed to. Also, before being implemented, the agreement must be approved by the legislative bodies of both countries. The following are some major provisions of the agreement:

- Chemical weapons will not be produced.
- The destruction of chemical weapons will begin by December 31, 1992, so that by December 31, 2002, the aggregate quantity of each country's chemical weapons stocks does not exceed 5,000 agent tons.
- Cooperation with each other and other states will be intensified to ensure that all chemical weapons-capable states become parties to the multilateral convention.

- Detailed provisions for the implementation of inspection procedures will be completed by December 31, 1990. This time frame has not been met; the United States and the U.S.S.R. are negotiating an agreement on inspection procedures.

Agreement Status

The two countries have reached agreement on the technical aspects for inspection procedures. However, the agreement has not been finalized because the Soviets wish to use their chemical weapons production facilities for civilian uses instead of destroying them as was originally planned.[1]

An ACDA official also believes that a revised destruction timetable should be agreed to before submitting the agreement for approval. The agreement calls for destruction of chemical weapons to begin by the end of 1992, but the Soviets will not be able to meet this time frame. A list of options for building the destruction facilities has been submitted to the Supreme Soviet, but no money has been approved and no sites have been selected. The ACDA official stated that construction of the facilities will take 24 to 30 months once a site has been selected.

According to the ACDA official, the administration plans to submit the agreement to Congress as an executive agreement once the issues have been resolved, but the current status of negotiations indicates that the agreement is not likely to be submitted before the fall of 1991 at the earliest.

Costs

The U.S. costs to construct facilities and destroy U.S. chemical weapons has been estimated at about $6.5 billion. The costs that the United States will incur for monitoring and inspecting the destruction of Soviet chemical weapons have not been determined. An ACDA official stated that before an estimate can be made, the Soviets must first decide on the procedures they will use to destroy their stocks. The different procedures that can be used have an impact on the U.S. personnel and equipment that will be needed in the U.S.S.R. to verify compliance.

[1]The draft of the chemical weapons convention calls for destroying chemical weapons facilities, and phase II of the September 1989 memorandum provides for developing plans for destruction.

Precursor Chemicals Controlled by the Australia Group (As of December 1990)

Chemical name[a]	C.A.S.[b] Number	Some civilian uses	Chemical agent (gas) produced
Worldwide controls (or core list)[c]			
1. Thiodiglycol	111-48-8	Photographic developing, ballpoint pen ink	Mustard
2. Phosphorus oxychloride	10025-87-3	Gasoline additives, hydraulic fluids	Nerve
3. Dimethyl methylphosphonate	756-79-	Flame retardants	Nerve
4. Methyl phosphonyl difluoride	676-99-3	Organic synthesis	Nerve
5. Methyl phosphonyl dichloride	676-97-1	Organic synthesis	Nerve
6. Dimethyl phosphite	868-85-9	Organic synthesis, lubricant additives	Nerve
7. Phosphorus trichloride	7719-12-2	Insecticides, gasoline additives	Nerve
8. Trimethyl phosphite	121-45-9	Organic synthesis, insecticides	Nerve
9. Thionyl chloride	7719-09-7	Chlorinating agent, pesticides	Mustard
10. Tri-ethanolamine	102-71-6	Detergents, cosmetics	Mustard
11. 2-chloroethanol	107-07-3	Insecticides, solvent	Mustard
12. N,N-Diisopropyl-(beta)-aminoethyl chloride	96-79-7	Organic synthesis	Nerve
13. N,N-Diisopropyl-(beta)-aminoethane thiol	5842-07-9	Organic synthesis	Nerve
14. QL (0-ethyl-2-diisopropylaminoethyl methylphosphonite)	57856-11-8	Specific uses not identified	Nerve
Warning list[d]			
15. 3-Hydroxy-1-methylpiperidine	3554-74-3	Pharmaceutical industry	Psychochemical
16. 3-Quinuclidinol	1619-34-7	Synthesis of pharmaceuticals	Psychochemical
17. Potassium fluoride	7789-23-3	Cleaning and disinfecting	Nerve
18. Dimethylamine	124-40-3	Detergents, pesticides	Nerve
19. Diethyl ethylphosphonate	78 38 6	Gasoline additive, heavy metal extraction	Nerve
20. Diethyl-N,N-dimethylphosphoramidate	2404-03-7	Organic synthesis	Nerve
21. Diethyl phosphite	762-04-9	Paint solvent, lubricant additive	Nerve
22. Dimethylamine hydrochloride	506-59-2	Pharmaceuticals, pesticides	Nerve
23. Ethyl phosphinyl dichloride	1498-40-4	Organic synthesis	Nerve
24. Ethyl phosphonyl dichloride	1066-50-8	Organic synthesis	Nerve
25. Ethyl phosphonyl difluoride	753-98-0	Organic synthesis	Nerve
26. Hydrogen fluoride	7664-39-3	Fluorinating agent, uranium refining	Nerve
27. Methyl benzilate	76-89-1	Organic synthesis, tranquilizers	Psychochemical
28. Methyl phosphinyl dichloride	676-83-5	Organic synthesis	Nerve
29. N,N-Diisopropyl-(beta)-amino ethanol	986-80-0	Organic synthesis	Nerve
30. Pinacolyl alcohol	464-07-3	Specific uses not identified	Nerve
31. Triethyl phosphite	122-52-1	Plasticizers, lubricant additives	Nerve
32. Arsenic trichloride	7784-34-1	Insecticides, ceramics	Lewiste blister and cyanide blood
33. Benzilic acid (2,2-Diphenyl-2-hydroxyacetic acid) (2,2-Diphenylglycolic acid)	76-93-7	Organic synthesis	Psychochemical
34. Diethyl methylphosphonite	15715-41-0	Organic synthesis	Nerve
35. Dimethyl ethylphosphonate	6163-75-3	Organic synthesis	Nerve

(continued)

Chemical name[a]	C.A.S.[b] Number	Some civilian uses	Chemical agent (gas) produced
36. Ethyl phosphinyl difluoride (Ethyl phosphorous difluoride)	430-78-4	Organic synthesis	Nerve
37. Methyl phosphinyl difluoride (Methyl phosphorous difluoride)	753-59-3	Organic synthesis	Nerve
38. 3-Quinuclidone	3731-38-2	Synthesis of pharmaceuticals	Psychochemical
39. Phosphorus pentachloride	10026-13-8	Plastics, pesticides	Nerve
40. Pinacolone (3,3-Dimethyl-2-butanone)	75-97-8	Specific uses not identified	Nerve
41. Potassium cyanide	151-50-8	Pesticide, electroplating	Cyanide blood
42. Potassium hydrogen fluoride (potassium bifluoride)	7789-29-9	Fluorine production, fluid in silver solder	Nerve
43. Ammonium hydrogen fluoride (ammonium bifluoride)	1341-49-7	Ceramics, disinfectant for food equipment	Nerve
44. Sodium bifluoride (sodium hydrogen fluoride)	7681-49-4	Pesticide, glass, and steel manufacturing	Nerve
45. Sodium fluoride	1333-83-1	Antiseptic, tin plate production	Nerve
46. Sodium cyanide	143-33-9	Manufacturing dyes and pigments	Cyanide blood
47. Phosphorous pentasulphide	1314-80-3	Insecticide, lubricant additives	Nerve
48. Di-isopropylamine	108-18-9	Organic synthesis	Nerve
49. Diethylaminoethanol	100-37-8	Textile softeners, anti-corrosion compositions	Nerve
50. Sodium sulphide	1313-82-2	Paper, rubber, metal, and dye manufacturing	Mustard

[a]Spellings are based on documents published by the Australia Group.

[b]Chemical Abstract Service (C.A.S.) identification number.

[c]definitions of worldwide differ among Australia Group members. Some countries require export licenses for all destinations, while others allow exemptions for exports to Group members, the European Community, and/or NATO countries. The United States exempts shipments to Australia Group and NATO members.

[d]As of the May 1991 meeting, the Australia Group had reached a consensus on controlling the warning list precursors. By the end of the year all members will control all 50 Group-identified percursors worldwide. However, differences continue to exist as to the definition of worldwide (see table note c).

Illegal Exports to Iraq and Iran

In April 1988, on the basis of intelligence information, the U.S. Customs Service stopped a shipment of approximately 118 tons of the precursor chemical thiodiglycol from reaching the proscribed destination of Iran. This shipment, from Alcolac International, Inc., of Baltimore, Maryland, was valued at about $208,000. The chemical is used in manufacturing mustard gas and is used commercially in textiles and ballpoint pen ink. Foreign policy export controls on thiodiglycol have existed since April 1984, with licenses required for shipment to Iran and Iraq. In July 1987, U.S. licensing requirements on the chemical were expanded to all destinations (except for Australia Group and NATO countries).

In February 1988, Alcolac applied for export licenses for the intercepted shipment. The shipping destinations were listed as Mexico and Argentina instead of Iran. The literature attached to the application properly identified the chemical. However, the chemical name on the application, although an alternative name for the chemical, was not included on the Commodity Control List (subsequently added), and Commerce personnel therefore made the determination the export did not require a license.

After stopping the shipment, the Customs Service clandestinely removed the chemical from its containers and substituted water. The containers were then allowed to travel to Singapore, where they were reexported to Pakistan and eventually arrived in Iran.

During the prior 14 months, Alcolac had shipped approximately 635 tons of the precursor chemical, valued at about $775,000, that were eventually diverted to Iran and Iraq. These shipments are summarized in table V.1.

Table V.1: Shipments of Thiodiglycol to Iraq and Iran

Shipping date	Tons	Invoice value	Listed destination	Routing and remarks
Shipments to Iran				
Broker/agent-Colimex				
Feb. Mar. 1987	30	$54,000	Greece	Greece to Iran; no export license is required for shipments to Greece.
Sept. 1987	64	105,960	Singapore	Singapore, Hong Kong, Pakistan, Iran; export to Singapore required a license as of July 1987, but was not applied for.
Subtotal	**94**	**$159,960**		
Shipments to Iraq				
Broker/agent-Nukraft				
Oct. 1987	139	$158,004	Switzerland	Belgium, Jordan, Iraq.
Jan. 1988	139	158,004	Belgium	The Netherlands. Shipment never reached the Netherlands; routing unknown but the shipment arrived in Iraq.
Feb. 1988	132	150,166	Western Europe	Belgium, Jordan, Iraq.
Feb. 1988	131	149,226	Western Europe	Belgium, Jordan, Iraq.
Subtotal	**541**	**$615,400**		
Total	**635**	**$775,360**		

In making these shipments, the importers' brokers falsified information on license applications, and at their request Alcolac's export manager used incorrect or misleading information on shipping documents that helped conceal final destinations. Several brokers were convicted of violating U.S. export laws, and Alcolac was fined $438,000. The export manager was convicted of falsifying documents.

Ordering Information

The first five copies of each GAO report are free. Additional copies are $2 each. Orders should be sent to the following address, accompanied by a check or money order made out to the Superintendent of Documents, when necessary. Orders for 100 or more copies to be mailed to a single address are discounted 25 percent.

U.S. General Accounting Office
P.O. Box 6015
Gaithersburg, MD 20877

Orders may also be placed by calling (202) 275-6241.

United States
General Accounting Office
Washington, D.C. 20548

Official Business
Penalty for Private Use $300

First-Class Mail
Postage & Fees Paid
GAO
Permit No. G100