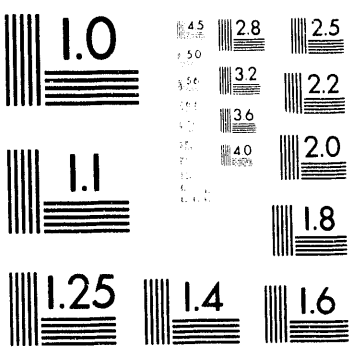
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United States General Accounting Office

GAO

Report to the Honorable
Albert Gore, Jr., U.S. Senate

December 1992

ARMS CONTROL

U.S. and International Efforts to Ban Biological Weapons

GAO/NSIAD-93-113

GAO

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

National Security and
International Affairs Division

B-251336

December 23, 1992

The Honorable Albert Gore, Jr.
United States Senate

Dear Senator Gore:

This report addresses the effectiveness of the United States and the international community to ban the development of biological weapons.

We plan no further distribution of this report until 5 days from its issue date. At that time, we will send copies to the Secretaries of Defense, State, and Commerce; the Director of Arms Control and Disarmament Agency; cognizant congressional committees; and other interested parties. If you or your staff have any questions concerning this report, I can be reached on (202) 275-4128. Major contributors to this report are listed in appendix X.

Sincerely yours,

Joseph E. Kelley

Joseph E. Kelley
Director, Security and International
Relations Issues

Executive Summary

Purpose

The proliferation of biological weapons has been a matter of great international concern. Considered as weapons of mass destruction—like nuclear and chemical weapons—biological weapons have proven difficult to control. Despite efforts such as those taken by the 125-member Biological Weapons Convention, the development of these weapons continues to increase. Because of these concerns, Senator Gore requested GAO to assess the effectiveness of efforts by the United States and the international community to curb the development of biological weapons. Specifically, this report addresses (1) the effectiveness of the Biological Weapons Convention, as well as efforts to strengthen it and (2) the effectiveness of U.S. and multilateral export controls in the proliferation of biological weapons.

Background

Biological weapons contain infectious or toxic agents, such as anthrax and botulism, which are derived from natural sources and cause disease or death. Development of these agents is difficult to control and detect because the items used to make biological weapons have many legitimate civilian uses, particularly in the pharmaceutical, medical, and food industries. For example, fermenters used to make vaccines or beer also can be used for biological weapon production.

The Bacteriological (Biological) and Toxin Weapons Convention, the treaty that bans the development, production, and stockpiling and acquisition of biological weapons was opened for signature in 1972 and came into force in 1975 after being ratified by 22 governments, including the depository nations of the United States, the United Kingdom, and the former Soviet Union.[1] In support of the Convention, the United States later established export controls on items used to make biological weapons. Further, in accordance with the 1990 President's Enhanced Proliferation Control Initiative, actions were taken to redefine and expand U.S. export controls, as well as to encourage multilateral controls through the Australia Group.[2]

Results in Brief

Thus far, the Convention has not been effective in stopping the development of biological weapons. In 1972, when it was opened for

[1]The depository nations are responsible for maintaining in their archives the Convention texts, membership information, and for holding Convention conferences at 5-year intervals or at the request of a majority of the Convention members.

[2]The Australia Group, a multilateral organization, is comprised of the United States and 23 other countries. The primary purpose of the Group is to harmonize its members' export controls on items used to make chemical and biological weapons.

signature, 4 countries were suspected of developing such weapons; presently, there are at least 10 such countries, some of which are members of the Convention. To strengthen the Convention, members have tried to recruit the approximately one-third of the world's countries that are not participating and have considered creating a verification regime. These efforts have been unsuccessful because critical Middle East countries have refused to join the Convention, while the United States and some other countries oppose an intrusive inspection regime. The United States believes verification methods would not be workable given the small size of biological items and the dual-use nature of biological research and development. In addition, an effort to increase compliance with the Convention through the voluntary exchange of biological research and vaccine information has also fallen short because most members have not provided the requested information and some submissions have been incomplete.

The United States has actively pursued an expansion and refinement of its export controls and created an adequate mechanism to coordinate export licensing for biological organisms, toxins, and related equipment. However, such items are widely available in the world market because Germany is the only other country with comprehensive export controls on them. Although the Australia Group members recently agreed to establish national export controls on such items, many biological weapons items will still be available on the world market, unless the Group's membership is expanded.

The ultimate effectiveness of export controls will be limited because the nature of biological agents makes it difficult to enforce such controls. They are most effective when complemented by other international agreements of nonuse such as the Biological Weapons Convention. However, for the Convention to be effective, some form of verification regime may be needed. The arrangement regarding biological site visits between the United States, the United Kingdom, and Russia, and an ongoing study of potential verification measures may show how obstacles to verification can be overcome.

Principal Findings

Biological Weapons Convention Lacks Universality

In 1990, the United Nations, the United Kingdom, the United States, and the Soviet Union initiated actions to persuade nonmembers to join the Convention. Their efforts have met with limited success. Fourteen countries, including Iraq, joined the Convention, bringing the total to 125 members, leaving at least 65 nonmember countries. Critical nonmember countries include Israel, Syria, and Egypt, all located in the strategic Middle East. These countries have tied their membership to establishment of a comprehensive multilateral arms control agreement.

Compliance Measures Are Ineffective

Several efforts to ensure compliance with the provisions of the Convention, short of a verification process, have not proven effective thus far. At present, the formal mechanism for addressing a suspected violation of the Convention is to lodge a complaint with the United Nations (U.N.) Security Council. This has been found to be impractical, because if the suspected violator is a member of the Security Council, that country may be in a position to veto any investigation. The Convention has not adopted a list of agents most likely to be used in the development of biological weapons. Proponents of such a list maintain that it would distinguish prohibited biological activities from allowable activities. Opponents, including the United States, maintain that such a list would be first step toward a verification regime and would give a false sense of security because the creation of new biological agents through biotechnology or genetic engineering could circumvent it.

Instead of a verification regime, the United States has supported confidence building measures, a voluntary exchange of information on biological research and related activities among members. While such measures could provide some value in assessing activities in member countries, from 1987, when annual exchanges were initiated, to 1991, only about 25 percent of the Convention members have made submissions. In 1991, the measures were expanded to include information on past biological weapons programs and to make submissions even when no data is to be reported. As of November 1992, only 36 countries had submitted reports, and some of these were incomplete. In addition, the U.N. does not ensure that the reports are submitted and are complete. According to a U.N. official, the U.N. can do little more than serve as a central distribution point, given the absence of financial support.

Advantages of Verification May Outweigh Disadvantages

Most members of the Convention have supported the need for a verification regime. Supporters recognize that such a regime would not be foolproof, but through inspections, could possibly deter violators and uncover violations. An effective inspection regime would require several actions, including (1) establishing what is specifically prohibited, including quantities; (2) developing procedures to reasonably protect proprietary information and defensive programs; and (3) using sufficient dedicated intelligence assets to pinpoint or identify the intent of the developer.

The United States strongly opposes such a verification regime, citing the difficulty in distinguishing between prohibited and allowable items, given the dual-uses of microorganisms and equipment required to produce biological weapons. The United States is also concerned about the intrusiveness an inspection regime would have on allowable industrial and defensive military biological research programs and on proprietary information. Further, it is concerned that an ineffective verification regime could create a false sense of security. As a compromise, in September 1991, the Convention members agreed to establish an Ad Hoc Group of Governmental Experts to study potential verification measures from a scientific and technical standpoint.

Although there are valid concerns regarding a verification regime, there are indications that some form of verification may be workable. The United States has entered into a trilateral arrangement with the United Kingdom and Russia. This permits visits to each country's civilian and military biological research facilities to build confidence and to resolve compliance questions over Russian facilities and actions with the Convention. Such an arrangement may show how some verification obstacles can be overcome, even though an Arms Control and Disarmament Agency official noted that the visits are not inspections and that it may not be possible to determine if Russia has discontinued the offensive program of the former Soviet Union. In addition, the United States has fully supported the recently concluded multinational agreement on chemical weapons, including a verification regime. While the problems posed by biological agents may differ, the chemical weapons agreement suggests that some obstacles to verification may be worked out over time.

U.S. Expansion and Redefinition of Export Controls Provide Comprehensive Approach

Since November 1990, the United States has expanded biological weapon export controls to include equipment, toxins, and technology. Controls on microorganisms, which until recently covered thousands of items, were redefined to reflect the 37 microorganisms that have the most potential for

military use in accordance with the criteria agreed to by the Australia Group. The United States has also begun the process of redefining its equipment controls to reflect those being considered by the Group. Although license procedures and coordination can be improved, once finalized, the United States will have assembled a comprehensive and adequate set of unilateral export controls to begin to address biological exports.

Efforts to Improve Effectiveness of Multilateral Controls

The 24-country Australia Group has made significant advances in defining lists of microorganisms, toxins, and equipment for control. However, targeted items can be readily found outside of the Australia Group countries. Thus, the effectiveness of the Group's controls will depend on an expansion of membership or successful efforts to encourage nonmember countries to adopt similar controls.

Recommendations

This report contains several recommendations to the Secretaries of State and Commerce for increasing the effectiveness of the Convention and for improving the administration of export controls. (See chs. 2 and 3.)

Agency Comments

As agreed with your office, GAO did not obtain written agency comments. However, GAO did obtain the views of cognizant agency officials and their views were considered in this report. The officials emphasized the difficulties in establishing a verification provision for the Biological Weapons Convention, particularly noting (1) the dual-use nature of items used to make biological weapons and (2) the difficulty of protecting industry's proprietary information. The officials did not raise objections to GAO's recommendations.

Contents

Abbreviations

ACDA	Arms Control and Disarmament Agency
BW	Biological Weapons
CBM	Confidence Building Measure
CIA	Central Intelligence Agency
DOD	Department of Defense
EAA	Export Administration Act
EPCI	Enhanced Proliferation Control Initiative
NPC	Non-Proliferation Center
NSC	National Security Council
U.K.	United Kingdom
U.N.	United Nations
UNIDIR	U.N. Institute for Disarmament Research
UNSCOM	U.N. Special Commission
U.S.S.R	Union of Soviet Socialist Republic

Introduction

The 1925 Geneva Protocol banned the use of biological weapons (BW)[1] in war, but not their possession. During World War II, the United Kingdom (U.K.) and the United States engaged in the development of offensive biological warfare programs to counter the possible use of BW by Germany and Japan. The weapons were not used, and in the late 1950s the U.K. ceased its program. However, the U.S. program continued to counter the Soviet BW program, and during the 1960s, the emphasis was on developing antipersonnel and anticrop agents for possible use in the Vietnam conflict. In November 1969, President Nixon announced a major policy change, which directed the United States to seek ratification of the Geneva Protocol, renounce the use of BW, and to dispose of existing BW stocks and weapons.

In 1972, after several years of negotiations, a treaty titled the Convention on the Prohibitation of the Development, Production, and Stockpiling of Bacteriological (Biological) and Toxin Weapons and on Their Destruction (referred to as the BW Convention) was opened for signature and entered into force on March 26, 1975 (see app. I).[2] The Convention bans the development, production, stockpiling, acquisition, and retention of biological and toxin weapons, and reiterates the nonuse obligations of the 1925 Geneva Protocol. The Convention does not encompass biological agents and toxins used to make BW, which are permitted for prophylactic (medical), protective (defensive), or other peaceful purposes. The Convention does not have provisions for inspections to ensure compliance with its ban on BW development. To review all operations of the Convention, the members held three review conferences in Geneva, Switzerland. The First Review Conference was held from March 3 to 21, 1980, the Second Review Conference from September 8 to 26, 1986, and the Third Review Conference from September 9 to 27, 1991.

In addition to the BW Convention, the United States has looked to export controls to stem BW proliferation. To control the export of biological items that could be used to produce BW but also have civilian uses, such as in the pharmaceutical and food industries, the United States requires exporters to obtain an individual validated license. The licenses are issued by the Department of Commerce in accordance with the foreign policy provisions

[1]BW contain living organisms or their derivatives, such as toxins, which cause disease or death. The living organisms can multiply within the living target to produce their effects, while toxins cannot reproduce themselves. Toxins are generally more lethal.

[2]The Biological Weapons AntiTerrorism Act of 1989, P.L. 101-298, implemented the BW Convention and protects the United States against the threat of biological terrorism through the imposition of fines and imprisonment involved in either BW or chemical weapons use.

of the Export Administration Act (EAA). [3] In determining whether to issue a license for certain countries, the Department of Commerce seeks the advice of the Department of State, the Arms Control and Disarmament Agency (ACDA), the Intelligence Community and, in some instances, the Department of Defense (DOD). A license will be denied if it is suspected that the items will be used in a BW program.

In late 1990, President Bush issued an executive order, followed by the Enhanced Proliferation Control Initiative (EPCI) policy statement, whereby the appropriate executive agencies were directed to enhance proliferation controls on exports that would aid in the development of chemical and biological weapons and to pursue multilateral export controls. As a result, export controls were expanded to include certain manufacturing equipment, technology, and toxins, and were applied to any item that would knowingly aid the development of chemical and biological weapons. In addition, the goal of deterring BW proliferation was furthered strengthened by the Chemical and Biological Weapons Control and Warfare Elimination Act of December 1991,[4] which provides for sanctions against persons (both natural and corporate) that make a material contribution to the chemical and biological weapons programs of certain countries, presently those on the terrorist list. The act also provides for sanctions against countries that use chemical and biological weapons (see app. IX).

In addition to unilateral controls, the United States is seeking to establish multilateral export controls through the Australia Group.[5] The Group was formed in 1984 to discourage and impede chemical weapons proliferation by harmonizing and improving the effectiveness of national export controls on chemicals that can be used in making toxic chemical agents. Recently, the Group has also directed its attention to establishing export controls on microorganisms, toxins, and related manufacturing equipment. Under the chairmanship of Australia, the Group meets twice a year in Paris. It has no charter or constitution and operates by consensus.

[3]Although the EAA expired on September 30, 1990, the President invoked the International Emergency Economic Powers Act and continued in effect, to the extent permitted by law, the provisions of the EAA and the Export Administration Regulations in Executive Order No. 12730 of September 30, 1990.

[4]P.L. 102-182

[5]The Australia Group comprises the North Atlantic Treaty Organization 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 Argentina, Australia, Austria, Hungary, Ireland, Japan, New Zealand, Sweden, Finland, and Switzerland. The Commission of the European Community is also a member.

Objectives, Scope, and Methodology

Our objectives were to review (1) the efforts underway to strengthen the Convention, (2) steps being taken to make the Convention more effective, and (3) the effectiveness of U.S. and multilateral export controls in preventing the proliferation of BW.

To assess the effectiveness of the Convention, we reviewed the Convention text and the results of its three review conferences and related U.S. policy documents and correspondence. We also held numerous discussions with agency personnel, particularly at ACDA. To obtain the private sector views on the Convention, we held discussions with a representative of the Federation of American Scientists and a representative of the Industrial Biotechnology Association. We also visited the United Nations (U.N.) in New York and spoke to an official in the Office of Disarmament Affairs on the U.N. role in supporting the Convention and a U.N. Special Commission (UNSCOM) official to discuss the U.N. inspections of suspected biological weapons facilities in Iraq.

To determine the effectiveness of U.S. and multilateral export controls, we reviewed export licensing regulations, procedures, and coordination of efforts between the Departments of Commerce, State, and Defense, the intelligence agencies, and ACDA. We obtained information on the number of license applications for biological items received, approved, and denied from February 1989 to August 1992, and selected a number of licenses for a detailed review. Also, we interviewed the president of the American Type Culture Corporation, an exporter of biological items, and visited the corporation's laboratory facilities. We discussed the new regulations on toxins with staff at a toxin manufacturer and the effectiveness of export controls with the Commerce's Office of Export Enforcement and the Customs Service. To analyze the effectiveness of multilateral export controls, we reviewed the Australia Group's documents and interviewed personnel from the Australian Embassy, Department of State, and ACDA.

To obtain the views of foreign government officials on how the Convention could be strengthened and the status of their export control regulations, we met with officials in the U.K., the Netherlands, Germany, and France. In Switzerland, we met with the Russian and Hungarian ambassadors, and the Argentine first secretary to the ambassador, to the Conference on Disarmament; personnel from the U.N. Institute for Disarmament Research (UNIDIR); and with a representative of the U.N.'s Office of Disarmament Affairs. In France, we also visited the French military defensive biological research center and discussed the issue of BW Convention verification with its director. In addition, we met with officials

in Australia to discuss the Australia Group's efforts to promote multilateral export controls on BW items.

As requested, we did not obtain written agency comments. However, we did obtain the views of cognizant officials from the Departments of State, Commerce, and Defense, and ACDA. Their views were considered in preparing the report. We conducted our review between October 1991 and November 1992 in accordance with generally accepted government auditing standards.

Biological Weapons Convention Has Not Been Effective

The BW Convention is the only international instrument for eliminating biological and toxin weapons and currently is the only treaty that calls for the elimination of an entire class of weapons.[1] To date, however, the Convention has not been effective against this objective. In fact, more countries are developing BW today than at the time the Convention was created.

Eliminating the development of BW has been difficult to achieve, principally because the Convention (1) lacks universality—about one-third of the world's countries are not members and (2) does not have an effective mechanism for ensuring compliance with its provisions. In recognition of these shortcomings, Convention members have increased efforts to enlarge Convention membership and have established a group of experts to examine the scientific and technical aspects of a system of verification.

While membership in the Convention has increased somewhat in the past 2 years, key countries in volatile areas, such as the Middle East, have not joined. Even among members, proliferation of BW has increased, which underscores the difficulty of enforcing the Convention's provisions. Most of the Western allies and many other countries favor the establishment of a verification regime, which would include compliance inspections. The United States and a few non-Western countries are opposed, principally, because they believe no effective system of verification can be established to distinguish between legitimate and prohibited uses of the items involved, and because any system of verification would be very intrusive, which could compromise proprietary and defense information. Instead, the United States has advocated voluntary reporting measures to develop confidence in the BW Convention. So far, most Convention members have not been responsive to these measures.

Convention Lacks Universality

For the Convention to be an effective instrument in stopping the proliferation of BW, it needs to be accepted and adhered to by the world community. To gain wider acceptance of the Convention, the three depository nations[2] prior to the Third Review Conference, sought to

[1]In August 1992, the Conference on Disarmament reached agreement on a draft Convention on the Prohibition of the Development, Production, Stockpiling and Use of Chemical Weapons and on Their Destruction. When implemented, it will ban all chemical weapons.

[2]The depository nations of the United States, the U.K., and the former Union of Soviet Socialist Republics (now Russia) are responsible for maintaining in their archives the Convention texts, membership information, and for holding Convention conferences at 5-year intervals or at the request of a majority of the Convention members.

persuade nonmembers to join. These efforts met with limited success because about one-third of the world's countries still have not become Convention members, including several countries in the strategic Middle East.

Efforts to Increase Membership

In October 1990, the Convention's depository countries, the United States, U.K., and the Union of Soviet Socialist Republics (U.S.S.R.), agreed to send diplomatic notes to nonmembers, requesting that they join the Convention. The newest member to join the Convention did so nearly 2 years prior to that time. In December 1991, the U.N. General Assembly passed a resolution urging all non-Convention members to join the Convention.

As a result of these renewed efforts to increase universality, 14 countries became members. At the end of November 1992, there were 125 Convention members, while 65 nonmember countries had not ratified or acceded[3] to the Convention (see app. II). The U.K. stated in 1991 that the lack of membership by Middle East countries was a particular problem, and that a strengthened Convention through increased membership was important in providing an effective Convention.

Obstacles to Increased Membership

The United States and other countries recognize the importance of expanding Convention membership. However, some nonmembers do not view participation as a priority, while others in the strategic Middle East have tied membership to regional security interests.

The majority of the nonmembers' countries are small (populations less than 5 million), and have little or no military capabilities. Several of these countries do not consider it a priority to join the Convention. However, in the Middle East and North Africa, several countries with significant military capabilities have not ratified or acceded to the Convention, including Israel, Egypt, Syria, Algeria, and Morocco.

In the Middle East, ratifying or acceding to the Convention has been tied to the establishment of a multilateral comprehensive arms control agreement. For example, Israel has stated that its decision to join the Convention is linked to those of the other countries in the region. Egypt

[3]Ratification applies to a country that signed the Convention during the period it was open for signature (1972-75) and subsequently, as a result of legislative approval, deposited its instrument of acceptance with one of the depository nations, the United States, the U.K., and Russia (formerly the U.S.S.R.). Accession applies to those countries that agree to accept the Convention after it was closed for signature, by providing its instrument of acceptance with one of the depository nations.

has stated that they have not ratified the Convention because of Israeli nuclear capabilities, and Syria has stated it will not ratify the Convention until Israel does so. In North Africa, Algeria stated it has no intention to accede to the Convention at this time, while Morocco stated ratification will be considered. In commenting on the Convention's lack of universality, in March 1991 the State Department stated that, in theory, export controls and restrictions on nonmembers might persuade members to join the Convention, but that key nonmembers are unlikely to be swayed by such measures. At the Third Review Conference in September 1991, the U.S. delegation noted the United States and the other depository nations' efforts to increase membership and that the United States will continue to promote universal adherence to the Convention.

Proliferation Has Increased Despite Growing Membership

During the 20 years the BW Convention has existed, the number of countries considered to be developing or recently engaged in offensive BW programs has risen from 4 in 1972 to at least 10 in 1992—some of which are members of the Convention. As a result of this increased threat, the United States has given priority attention to its biological defensive efforts. In October 1992, the U.S. Army created the Chemical and Biological Defense Agency, which will be responsible for research, development, and acquisition for all Army chemical and nonmedical biological defensive programs, such as detection and warning equipment.

A Verification Regime May Strengthen the Convention

During the Third Review Conference, in September 1991, most Convention members favored the establishment of a verification regime, but the United States and a few non-Western countries opposed it. In a compromise move, the Third Review Conference established an Ad Hoc Group of Governmental Experts drawn from member countries to study potential verification measures from a scientific and technical standpoint. The members interest in establishing such a regime resulted from the recognition that the Convention lacked an effective mechanism for ensuring compliance with its provisions.

Lodging a Complaint With the U.N. Not Practical

At present, the formal mechanism for addressing a suspected violation of the Convention, as established by article 6 of the Convention, is to lodge a complaint with the U.N. Security Council. However, this has been found to be impractical, because the suspected violator may be a member of the Security Council or a country allied with a member of the Security Council and in a position to block any investigation.

Article 6 was not invoked, even though the United States raised concerns about the former U.S.S.R.'s compliance both through diplomatic channels and at the Convention's first and second Review Conferences in 1980 and in 1986. According to a DOD official, the United States did not seek to invoke article 6 against the U.S.S.R. because, as a member of the Security Council, it was in a position to veto any such action. In addition, it would be difficult for any country to prove a violation without disclosing intelligence sources and methods.[4] An ACDA official stated that the United States probably would not invoke article 6 of the Convention for violations because "quiet diplomacy" is at present believed to be more effective than long, drawn out discussions at the U.N. The State Department also noted that violations of the BW Convention can be addressed through bilateral or multilateral measures such as the trilateral arrangements between Russia, the United States, and the U.K. However, to date, there is no evidence that these arrangements have been successful, and further they may not provide adequate assurance to other Convention members that the Convention is being adhered to.

Convention Members Disagree on Whether to Identify What Is Prohibited

At the Third Review Conference, some members proposed incorporating into article 1 an indicative[5] or specific list of agents that would most likely be used in BW. In addition, an effort was made to establish quantity limitations or thresholds for these agents that could be possessed by each country. The Russian delegate noted the usefulness of a list for clarifying the borderline between the prohibited and non-prohibited activities of the Convention. Many other delegations, and representatives from U.N. Institute for Disarmament Research, expressed similar views that without an established criteria, prohibited activities would be difficult to determine. The director of a French military biological research laboratory advocated establishing an indicative list of agents that could be amended as necessary, and cited that presently, only 10 to 20 agents have any military significance.

The United States opposes any type of list for the Convention, even if described as indicative rather than comprehensive. The State Department

[4]A State Department official said an effective inspection regime would require sufficient dedicated intelligence assets to pinpoint or identify the intent of the developer of microorganisms and toxins.

[5]An indicative list is one that would contain those microorganisms and toxins most likely to be used for biological weapons, but would not necessarily include all possible items. (Typically, lists indicated by international bodies have focused on BW agents that the United States developed and researched in the 1960s.)

noted that to establish a list of microorganisms would be the first step[6] toward a verification regime and should not be considered until completion of the Ad Hoc Group of Governmental Experts study on verification. Furthermore, a U.S. delegate to the Review Conference stated that the United States is against establishing control lists in the Convention because it would provide a false sense of confidence, as no list can be complete. The delegate further stated that new developments in biotechnology could make it possible to circumvent any list by the creation of new agents. Additionally, ACDA stated that for arms control verification purposes, a list would be so expansive as to be unmanageable or so short that it would provide many loopholes for BW Convention noncompliance.

After some debate, the U.S. view prevailed, and no action was taken by the Convention to incorporate any type of list in article 1 of the Convention. However, there was agreement to establish the experts group to look at the feasibility of a verification component to the Convention.

U.S. Questions the Feasibility of Verification

The U.S. position, developed before the Third Review Conference, was that "The Convention is not verifiable and we do not know of any way to make it verifiable." A U.S. position paper stated that any serious attempts at verification would require intrusive on-site inspections of thousands of laboratories and research centers in the United States and that an ineffective verification regime could ultimately make cheating easier and more attractive by creating a false sense of confidence. In addition, the United States was concerned that verification measures could adversely affect its BW defensive program and become a tremendous burden to industry, especially jeopardizing proprietary information. However, from the outset of the Review Conference, strong efforts were made by France, Germany, and other countries to draft a verification provision. To counter these efforts, the United States promoted Confidence Building Measures (CBM)—a voluntary exchange of information on biological research and related activities among members—and, in conjunction with the U.K., developed a strategy to support the creation of the experts group to study verification.

ACDA also stated, in providing informal views to a draft of this report, that the United States' understanding of the term verification is somewhat different than that held by other countries. U.S. standards for verification,

[6]Before a verification regime can be established, there must be some criteria to establish when a violation occurs. A list of microorganisms that could be used to develop BW weapons would be an important criteria to judge compliance during any inspections.

according to ACDA, emphasize detection as the driving force for deterrence of treaty violations, while other nations appear to be content to use the term verification for measures they believe increase to some degree the cost or risk of cheating.

Experts Group Meeting on Verification

In accordance with the mandate of the Third Review Conference, the Ad Hoc Group of Governmental Experts met in Geneva from March 30 to April 10, 1992, to identify and evaluate potential verification measures from a scientific and technical standpoint (see app. III). Fifty-three countries participated in a series of meetings. The Ad Hoc Group agreed to examine 21 potential verification measures under the three broad areas of a BW program: development, acquisition or production, and stockpiling or retention. A moderator and two assistants were named for each of the areas to be studied.

U.S. support for the experts group to study the feasibility of verification measures was based on several conditions. It advocated that such a study should have carefully drawn terms of reference, including specific goals, limited duration, participation by government representatives only, reports based on consensus, and no mandate for drafting verification provisions.

The U.S. strategy for the first meeting of the Ad Hoc Group of Governmental Experts called for the U.S. delegation to be open to constructive suggestions, but to oppose any ineffective verification provision and any measures that would limit the U.S. government's ability to pursue its biological defense programs, and impair the U.S. biotechnology industry's competitive edge now held in the world. The U.S. delegation was to explain to the other delegations the nature, diversity, and complexity of biological research, including its dual-use nature, the small size of some equipment, and its widespread existence[7] Furthermore, the delegation was to explain that because of legitimate commercial and defense activities requiring biological items, evidence of an offensive BW program is therefore not easily identifiable. The United States did not make any verification proposal during the meeting.

From November 23 to December 4, 1992, the second meeting of the Ad Hoc Group was held in Geneva, Switzerland. It was attended by representatives from 46 countries. The U.S. Ambassador to the meeting said that the representatives at the meeting did not discuss the pros and

[7]One of the papers presented by the United States at the Ad Hoc Group of Governmental Experts meeting in March 1992 was titled Brewery Operations. The paper noted much of the equipment used in making beer, such as fermenters, are essential in the manufacture of pharmaceuticals.

cons of issues, but discussed what can be done to examine the verification measures. The 21 potential verification measures were grouped into 7 categories for further study. The United States plans to study and evaluate all these measures before the next meeting, which is planned for the 2-week period starting May 24, 1993. A final meeting to draft a report on the results of the Ad Hoc Group's work is planned for the 2 weeks starting September 23, 1993.

Foreign Countries' Support for a Verification Regime

During our overseas visit, we obtained the views of officials from six countries—the Netherlands, Germany, Argentina, Russia, the U.K., and France—on the feasibility of verification and its relationship to CBMs, if any. A Hungarian ambassador, who is chairman of the Ad Hoc Group, did not express an opinion because he felt that, given his position, he should remain neutral. Five of the countries' officials were in favor of some type of verification mechanism, while one believed the issue required further study.

The Netherlands

Dutch officials stated that, in principal, there should be a verification mechanism such as with nuclear weapons and such as will be with chemical weapons. If not, proliferating countries might direct their development efforts to biological weapons. They recognize that a verification regime cannot provide for a 100-percent assurance that violations will be detected, but it would provide for substantial deterrence. CBMs, since they are voluntary measures, would not be part of a verification regime, but could be used as indicators to aid in verification. They also noted the United States may not be interested in verification for the BW Convention because it has other military means to deal with a BW threat, unlike other smaller countries like the Netherlands, which do not.

Germany

German officials stated that there is a high level of political support for a BW Convention verification regime. They noted that when Germany signed the Convention, the parliament told the administration to seek a verification regime for the Convention. They further stated that a verification regime need not be 100-percent foolproof and that anything that provides for a level of assurance exceeding 50 percent makes sense. They believe a verification regime must carry out inspections within a 24-hour notice and be intrusive.

German officials said they see CBMs as part of the transition from the voluntary exchange of biological information to a verification regime and that they should be made legally binding. They noted some CBMs would

become superfluous in a verification regime, since they would be part of the verification process.

Argentina

An Argentine official stated that his country prefers a combination of CBMs in addition to verification, including on-site inspections in certain instances. He believes the verification process should start out gradually and develop into a well-defined regime.

Russia

The Russian Ambassador to the Conference on Disarmament stated verification should be instituted in combination with some CBMs, but noted that no verification system can be foolproof. A verification provision should include challenge inspections,[8] and costs should be considered.

United Kingdom

A U.K. official said that the U.K. has not taken a position on verification but has maintained an open-minded approach. He saw the need to examine the issues through a series of steps. He also stated that the BW Convention can be strengthened gradually through CBMs.

France

French officials stated that a verification regime should be practical and not too costly and should provide a deterrent to countries considering BW development. They advocated a system that allows for very quick intrusive inspections that would be performed on an exception basis. The verification system could be part of an existing U.N. system to keep down costs. They also said that CBMs, as such, would not be part of the verification regime because they are not compulsory and are not easy to corroborate. However, some CBMs could evolve into compulsory declarations, which could be part of the verification regime.

The Director of Biological Research at a French military center stated that it is possible to have a verification regime in the BW Convention if expectations are not too high. A verification regime could consist of observations and technical inspections, but it would be difficult to control the work at biological research laboratories. He further noted that stopping the production of small amounts of microorganisms and toxins for use in terrorism would not be likely. He said indicators of strategic BW development would consist of large-scale production of an agent, the existence of certain storage facilities, the use of certain equipment such as fermenters and freeze drying equipment, and the safety protection being provided personnel. The State Department, however, noted that given

[8]Under the concept of challenge inspections, a country that suspected another country was not complying with the BW Convention could request international inspectors to conduct an onsite inspection on short notice.

modern biotechnology, the requirement to stockpile large amounts of agents no longer exists.

Nongovernment Views on Verification

There are many and varied nongovernment views on verification, but we found none opposed to the concept of verification, although industry is concerned about protecting its proprietary information. Following are three such views.

Federation of American Scientists

The Federation believes the Convention should be and can be strengthened through a verification regime. They have established a working group to study how verification can best be accomplished and have presented several proposals to the United States and other countries. The Federation believes the United States should conduct trial inspections so that the lessons learned can be incorporated into a verification regime.

Industrial Biotechnology Association

The Association prepared an issue paper on verification, noting the problems that could be incurred through verification and inspections, but did not oppose the establishment of a verification regime. A principal concern was the loss of proprietary information that might result from inspections.

U.N. Institute for Disarmament Research Consultants

Consultants working for U.N. Institute for Disarmament Research favor verification. They noted, however, the difficulty in establishing an effective verification regime, principally because the Convention does not specifically define what is prohibited. For this reason, it is almost impossible to distinguish between legitimate biological programs and programs intended for offensive BW. They stressed that the Convention must first, define what is to be verified before focusing on a verification regime.

There are differing views within the U.S. government on private sector concerns about verification. An ACDA official stated he knows of no one opposed to an "effective verification" regime. On the other hand, a State Department official expressed the view that there is significant opposition from U.S. industry to verification provisions that would include site visits because of concern about the disclosure of proprietary information. In a similar situation, we noted in our report on chemical weapons[9] that while the Chemical Manufacturers Association was not opposed to inspections, it was concerned about the protection of proprietary business information

[9]U.S. and International Efforts to Ban Chemical Weapons (GAO/NSIAD-91-317, Sept. 30, 1991).

during inspections. However, in August 1992, the Conference on Disarmament was able to reach agreement on a Chemical Weapons Convention draft, including inspections, which will be opened for signature in January 1993.

Iraq Inspections and Other Visits Could Form a Basis for a Verification Regime

While the United States does not believe an effective BW verification regime can be established, it has supported visits to Russia and on-the-ground intrusive inspections in Iraq as ways to support compliance with the Convention. In mid-September 1992, the U.K., the United States, and Russia made a trilateral joint arrangement that would provide for visits to civilian and military biological facilities to begin to resolve noncompliance issues (see app. IV). Initial visits will be to Russian civilian facilities. A working group of the three countries will address several issues before the visits to military biological facilities commence.

An ACDA official stated that the visits will provide transparency of Russian BW programs and could provide greater confidence in official statements that Russia is terminating the illegal offensive BW program. However, the official emphasized that the visits are not inspections, because no standardized compliance criteria have been developed. He also noted that the experts making the visits may not be able to make decisive judgments about Russian termination of its offensive BW program.

U.N. Special Commission inspection teams conducted three ground inspections in 1991 to determine the extent, if any, of Iraq's BW program (see app. V). No conclusive evidence of any significant offensive BW program was found, but there was some indications of a minor offensive program. The lessons learned from these inspections have been considered by Convention members and should aid in the study of a verification regime. For example, a report prepared by the U.K. stated that during an inspection, a broad range of expertise should be used that could identify the significance of information and material uncovered. The report also concluded that it is possible to make a confident assessment about biological activities through several types of indicators without actually finding a biological weapon. However, most members recognize that no verification regime would allow the same extent of intrusiveness as was thrust upon Iraq, a defeated nation.

Limited Implementation of CBMs

In 1986, the Second Review Conference requested that members annually exchange limited information on their biological research and related scientific activities, anticipating that this would help in deterring violations. The type of information would include the names and locations of research facilities and data on outbreaks of infectious diseases (see app. VI). The Third Review Conference, in 1991, further expanded information to be submitted to include biological offensive and defensive programs.

The first CBMs were to be submitted no later than October 15, 1987, with subsequent submissions to be made annually, no later than April 15 of each year. Members were to make their submissions to the U.N. Department of Disarmament Affairs,[10] which would forward them, as received, to Convention members. However, as of early November 1992, less than one-third of the countries had made submissions and some of the submissions had been incomplete. In addition, the U.N. does not translate the data, which can be received in any one of five languages, or analyze it for correctness and completeness. Consequently, the CBMs' goals of providing openness and transparency of a country's biological program have not been realized given the limited member participation and support by the U.N. Therefore, as voluntary measures, CBMs have not constituted an effective means of providing confidence to member countries that the Convention provisions were being adhered to.

Initial Submissions

At the Second Review Conference, members were requested to submit information on (1) nonmilitary research laboratories and centers, (2) abnormal outbreak of infectious diseases, (3) scientific publications related to biological research, and (4) contacts between scientists engaged in biological research. From 1987 to 1991, 41 countries participated in the CBM information exchange one or more times; but, only 25 countries participated in the exchange two or more times. In 1991, 34 countries participated in the information exchange out of a total of 115 countries listed by the U.N. as parties to the Convention.

In March 1991, the State Department expressed concern that in any given year, only one-fourth of the parties have been participating in the CBMs agreed to in 1986. Many member countries, according to the Department of State, do not report because they have no facilities of the types covered by CBMs or because they see no need to submit a negative report. In

[10]In 1992, as part of a reorganization in the U.N., the Department was changed to the Office of Disarmament Affairs.

addition, the lack of resources in foreign ministries of small countries also contributes to the low rate of participation.

Expanded Requirements and Submissions

At the Third Review Conference in September 1991, the members expanded the first CBM requirement to include the exchange of information on national biological research and development programs (previously the requirement applied only to nongovernment activities) and added four additional CBMs. The new CBMs requested members each year to report information on national implementation legislation as related to the Convention, past offensive and defensive BW programs, facilities producing vaccines, and to so state if there was no information to report.

To date, compliance with the expanded CBMs remains quite limited. As of early November 1992, only 36 countries submitted reports. No countries in Africa and only four in Latin America submitted reports. According to the U.N. office responsible for receiving and distributing the CBMs, 14 reports[11] were received by the end of April 1992 (the due date was April 15), with the remaining 22 reports[12] received over the next several months.

A brief review of CBM submissions showed that not all countries are submitting detailed information, and some did not address the specific CBM requirements. The submissions from several countries did not address the CBM requirements, such as whether they had vaccine production facilities or implementing legislation as it related to the Convention. Rather, the submission consisted of a one line statement, essentially stating that they do not possess, produce, or stockpile bacteriological or toxin weapons. In addition, we noted the submission from a major country did not address most CBM requirements. The submission consisted of one page and only answered questions on "Legislation, Regulations and Other Measures."

Views on the Value and Use of CBMs

According to an ACDA official, CBMs are valuable because they provide information on what is taking place in a country, which can help to explain activities in a country that may have been questionable. A DOD delegate to the Review Conference added that CBMs provide important information on

[11]The initial CBMs received were from Australia, Austria, Canada, Cyprus, Czechoslovakia, Germany, Mongolia, New Zealand, Norway, Sweden, Switzerland, U.K., United States, and Yugoslavia.

[12]The 22 other CBMs received were from Belarus, Bulgaria, Finland, Hungary, Japan, Malta, Netherlands, Republic of Korea, Tunisia, China, Denmark, France, Ukraine, Argentina, Belgium, Jordan, Mexico, Russia, Spain, Thailand, Peru, and Cuba.

biological research facilities and encourage more openness about BW research programs.

Officials from seven countries we spoke to supported the concept of CBM submissions and two countries advocated that CBMs be made legally binding. Further, officials from six of the countries recognized the important role CBMs could play if a verification regime is established. However, one country official noted that as voluntary measures they could not be part of a verification regime. Also, one official emphasized that the CBM packages distributed by the U.N. are presently of little use because they are disorganized and untranslated. Two country officials stated that CBMs are reviewed by their governments, while officials from the other four countries did not say what use, if any, is made of the CBMs.

Limited U.N. Administrative Support

The U.N. Office of Disarmament Affairs, at the request of the Secretary General of the U.N., has supported the Convention by, among other measures, facilitating the receipt, compilation, and issuance of the CBM reports to the Convention members from within its own resources and at no cost to the Convention members. However, the U.N. Office has no responsibility to initiate action to ensure that the goals of the CBMs are addressed, such as sending out reminders to members when their CBMs are not forthcoming or are incomplete. According to a U.N. official working in the Office, given the existing level of the office's resources, it can do little more than serve as a central distribution point.

In preparing for the Third Review Conference, the United States, the U.K., and others recognized the shortcoming of the U.N. support. For instance, a State Department guidance cable to its representatives, who were attending a preparatory meeting in March 1991, called for an improved mechanism for distributing information provided in the CBM exchange. The cable noted that reports are presently circulated in the original language of the submission and are not available to nongovernmental groups. The U.K., in a policy paper and during discussions with the U.S. representatives prior to the Review Conference, stated that the U.N.'s arrangement for handling the CBMs was unsatisfactory.

U.K. officials stated that computer capability is needed to handle the data submitted in the CBMs and proposed that a small unit—one professional staff and secretarial support—should be established within the U.N.'s Office of Disarmament Affairs, at a cost of about $200,000 annually. The U.K. officials noted that the unit could be in regular contact with members'

disarmament experts in Geneva, and could organize the input of returns on the computer, assist countries in accessing data to answer specific queries, and could be responsible for "chasing" parties for updates of their returns. The unit could also provide support to the Convention as required.

Although the United States and many other members supported the U.K. proposal to establish and fund a separate unit within the U.N., consensus could not be reached among the members attending the Third Review Conference. Some Conference members were unwilling to provide funds to support additional staff or pay the expenses incurred in processing the CBMs, while others objected to a more formal organization. The U.N. official responsible for CBM processing did not expect any additional resources and said that, given what is at his disposal, all he can do is to receive the CBMs and forward them as received to the Convention's membership.

Instead of establishing the unit to assist in the CBM process, the Third Review Conference called for the U.N. Secretary General to allocate the necessary staff and resources, including the use of a database, to the Office for Disarmament Affairs to assist in effectively implementing relevant decisions of the Third Review Conference, particularly the CBMs. No funds, however, were provided. In addition, the members agreed to review the requirement for, and the operation of, these added arrangements at the Fourth Review Conference.

Conclusions

The BW Convention has thus far not proven to be an effective instrument in addressing the proliferation of BW. The Convention does not list specifically what is prohibited, and provides no means to verify violations. The United States has not supported the development of lists of types and quantities of prohibited BW items or the creation of an intrusive inspection regime, because the United States does not believe such measures would strengthen the Convention. However, a growing number of other countries believe such measures would strengthen the Convention. The United States has agreed to an examination of the technical merits of verification proposals, but has opposed any regime that would limit the U.S. government's ability to pursue its biological defense program and which would impair U.S. industry's competitive edge.

The study of the technical utility and feasibility of verification measures and technologies will clarify what level of confidence can be gained from verification. However, for the Convention to be effective, some form of verification regime may be needed. The agreements between the United

States, the U.K., and Russia are a step in this direction. Additional steps are likely to emerge from the verification study.

CBMs can also be a step toward verification if they are made more effective. Specifically, they need to be submitted by all members, complete and accurate. This is not the present case as evidenced by the limited membership participation and, in some instances, the incomplete information being provided. A central authority could address these deficiencies, as well as tabulate, translate, and analyze the information for comparative purposes and completeness. However, at this time, the Convention has no established organization to carry out these functions. The U.N. has been requested by the membership to receive and distribute the CBMs but, because of limited resources, can do little else.

A further impediment to an effective Convention is the lack of universality, particularly among strategic Middle East countries. These countries refuse to ratify or accede to the Convention until there are new security arrangements in the region. Until such arrangements are made, continued efforts by the United States and the other depository governments to stress to these and other countries the importance of becoming Convention members may be the best approach to increasing membership.

Recommendations

We recommend that the Secretary of State, in conjunction with the Director of ACDA,

- instruct the State representative to the U.N. to continue to request the Secretary General to provide adequate resources to the Office of Disarmament Affairs to enable the Office to translate the CBM reports submitted, to examine them for completeness, and to urge countries to make timely and complete submissions and
- reach an agreement with the U.K. and Russia whereby all relevant information, which would not compromise confidentiality, resulting from the U.S., U.K., and Russian visits to biological facilities can be made available to the Ad Hoc Group of Governmental Experts for use in their deliberations on verification measures for the Convention.

U.S. and Multilateral Export Controls

The United States has actively pursued an expansion and refinement of its export controls and created an adequate mechanism to coordinate export licensing of BW. The Bush administration has also harmonized U.S. export controls with those recommended by the multilateral Australia Group. However, Germany is the only country other than the United States that has comprehensive controls on the export of items needed to make BW. Most biological organisms, toxins, and related equipment useful for BW have civilian uses and are widely available in the world market on an uncontrolled basis.

To address this situation, the United States and other Australia Group countries have agreed to establish similar national export licensing controls. Although the adoption of controls by Group members is a major accomplishment, many BW items will still be available on the world market unless the Group membership is expanded and countries outside the Group adopt similar controls.

United States Has Improved Licensing Controls

In support of the BW Convention and its general nonproliferation policies, the United States established export controls on microorganisms that could be used for BW. In the last 2 years, the Bush administration has revised export controls on microorganisms and has established, for the first time, controls on manufacturing equipment, technology, and toxins. In addition, the administration also brought under control any item that would knowingly aid BW proliferation. These controls are exercised through required license applications that are submitted to the Department of Commerce, which either grants or denies individual validated licenses for exports.

The revised emphasis on BW export controls began in November 1990. At that time, the President issued an executive order, which was followed in December by the President's Enhanced Proliferation Control Initiative (EPCI), designed to strengthen U.S. export controls and harmonize them with multilateral efforts. The order also required the Secretary of Commerce to coordinate any licenses with the Secretaries of State and Defense. In accordance with this authority, the Department of Commerce, on March 13, 1991, established licensing requirements for four types of biological manufacturing equipment (see app. VII) and certain technology exports to 28 countries.[1]

[1]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

On August 15, 1991, also in accordance with the EPCI, Commerce began to apply controls to the export of any item or service to the 28 specified countries that an exporter has reason to know or is informed contributes to the development of a BW program (termed the "knows rule" or the "catch all rule"). Under this rule, the U.S. government can stop an export of any item by informing the exporter that the item requires an export license. The application could then be denied based on information that the item would aid in the development of BW. Commerce informed us that to date the catch all rule has not been applied to a shipment of BW items. Before establishment of this rule, the United States could not control the delivery of items if not specifically listed in the EAA regulations, even if intelligence sources were aware such a delivery could aid the development of BW.

On July 15, 1992, Commerce established a list of 10 toxins subject to licensing controls.[2] Previously, toxins were not specifically controlled, but shipments could have been stopped under the catch all rule. Concurrent with the implementation of toxin controls, Commerce redefined its list of microorganisms subject to control by reducing the number of items from many thousands down to 37 items. These changes were enacted to make U.S. controls reflect those items being considered by the multilateral Australia Group. The new controls also reflect, based on Group criteria, those microorganisms and toxins that have the most potential for use in BW (see app. VII).

In keeping with the effort to harmonize U.S. control lists with those of the Australia Group, the Commerce Department, on September 14, 1992, issued a proposed rule that listed seven equipment items identical to those agreed to by the Group for control (see app. VII). In November 1992, the Department of Commerce notified Congress that controls would be enacted on six of the equipment items on the Australia Group list once an agreement is reached by the Group, noting that the seventh item (containment equipment) is currently controlled. The Australia Group agreed at its December 1992 meeting to control the seven equipment items. Three of the four items currently controlled by the United States that do not appear on the Australia Group list will be decontrolled.

[2]Currently, controls on toxins and microorganisms apply to all countries except Canada.

Comparison of License Applications Received for Microorganisms Under Previous and Revised Regulations

For about 3-1/2 years beginning when foreign policy controls were enacted and ending when new controls took effect, Commerce acted on 1,598 license applications for microorganisms, or an average of 53 applications every 6 weeks. Of those, we found 1,453 applications, valued at about $15 million, were approved,[3] 134 were returned without action,[4] and 11 were denied. [5] Licensing decisions for 21 microorganism applications submitted during this period remained outstanding on July 14, 1992, and, of those, 2 remained outstanding as of October 20, 1992.[6]

In the first 6 weeks of revised controls, the number of applications received were less than one-quarter their average under the earlier controls. From July 15 to August 28, 1992, exporters applied for 12 microorganism licenses. Commerce approved seven of the microorganism licenses, valued at about $112,000, returned three without action (two of which did not require a license), and denied one. One application was still pending disposition as of October 20, 1992.

Based on the Australia Group's identification of items of concern reflected in the current U.S. controls, it appears that most microorganisms controlled under previous regulations were of marginal concern. Furthermore, on the same basis, it appears that 9 of the 11 licenses denied under previous controls involved items of marginal concern, since today they would not require a license application.

Controls on Equipment and Toxins Result in Few Applications

Unlike the experience with microorganism applications, there are indications that exporting companies may have insufficient knowledge of the regulations concerning BW equipment, implemented March 13, 1991, and toxins, implemented July 15, 1992. We found that few exporters have applied for licenses to export these items since the enactment of new

[3]Commerce reported in its Foreign Policy Report to Congress that from February 23, 1989, through the end of the year, it had approved 423 microorganism license applications worth $8.9 million. We found 519 licenses approved, for $9,065,120 for that period. For calendar year 1990, Commerce reported 430 licenses approved, worth $211,000. We found 430, for $578,434, in 1990. For calendar year 1991, Commerce reported 241 applications, for "almost $4 million." We found 330 approvals, for $4,445,086, in 1991. From January 1 to July 14, 1992, we found 174 licenses approved, for $951,169.

[4]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.

[5]The destinations and number of denied licenses were the U.S.S.R. (4), Taiwan (2), and one each to Jordan, Brazil, Egypt, Iran, and South Africa. Nine of the 11 denials were for items no longer subject to licensing after July 14, 1992.

[6]These items have been pending in the Office of Export Enforcement for several months. An enforcement official said that prelicensing checks have been requested for both applications but that in-country Commerce staff have yet to complete them.

regulatory requirements. For example, from March 13, 1991, to August 28, 1992, only two licenses for equipment were applied for, including one approval valued at $10,000, and one that was returned without action. A Commerce official stated that this figure was unusually low and believed it could be due to a lack of knowledge on the part of exporters of the existing regulations.

In May 1992, the Commerce Department's Office of Export Enforcement identified U.S. manufacturers of BW equipment planned to be controlled by the United States and other Australia Group members. The information was provided to enforcement field offices for possible outreach visits whereby manufacturers would be informed of the export licensing requirements that are under consideration.

In addition, Commerce, for the 6-week period following the imposition of export controls, received no applications for toxins. As discussed later in this chapter, at least one manufacturer exported toxins during this period without acquiring export licenses. The manufacturer's export manager claimed he was misinformed as to the licensing requirements.

License Coordination Can Be Improved

Commerce Department licensing procedures (see app. VIII) provide for coordination of biological license applications with the Central Intelligence Agency's Non-Proliferation Center, the State Department, and DOD. However, Commerce's direct coordination with DOD has been quite limited.

In October 1992, Commerce made a proposal to increase the number of licenses to be sent to DOD for review and coordination. The proposal was essentially accepted by one office in DOD, but rejected by another office as being too limited. As of late November 1992, the issue had not been resolved. The Commerce Department's license coordination with the State Department has not been at issue, but the current focal point for license coordination does not have the technical expertise to review licenses.

Most Licenses Are Not Coordinated With DOD

Commerce automatically refers to DOD license applications for BW items only if destined to any one of five countries—Iran, Iraq, Syria, Libya, and Jordan. This is done in accordance with interagency agreements effective in early 1991. However, a November 1990 executive order requires Commerce to "coordinate any" BW licenses with the Secretaries of Defense

and State. At State's request, only licenses destined for 30 countries of concern are sent to State for advisory reviews.

In mid-October 1992, the Department of Commerce circulated for interagency comment a proposed revision of the referral procedures for export licenses. Under this proposal, DOD would receive some additional licenses for BW items. A DOD official representing the Office of International Security Affairs said the proposal, while granting access to more license applications, does not go far enough. He plans to respond to Commerce's proposal by stating that DOD should have the option of having access to all BW license applications. However, the Defense Technology Security Administration responded positively to the proposal but suggested the addition of one other country. A National Security Council (NSC) official stated that he did not expect finalization of the referral proposal until the new administration takes office.

State Focal Point for Licenses Does Not Have Needed Expertise

Currently, the State Department's Office of East-West Trade in the Economic and Business Affairs Bureau is the focal point for receiving license applications for chemical and biological items[7] that are to be coordinated within State and ACDA, and for providing a consolidated recommendation to Commerce. While the office maintains that it should retain coordinating responsibilities because it can better address industry concerns, it does not have the expertise to technically review BW or chemical weapons licenses, and acts only as a central coordination point and record keeper.

A more logical focal point for license review at State would be the Office of Weapons Proliferation Policy, Bureau of Politico-Military Affairs. This office is the focal point for coordinating the chemical weapons and BW nonproliferation policy for the U.S. government. In addition, it (1) co-chairs the interagency Shield Group that discusses chemical weapons and BW export cases, (2) receives denial notifications from the Australia Group members and transmits U.S. denial notifications to Group members, and (3) interfaces with foreign government officials on technical and political aspects of controlling chemical weapons and BW exports. The Bureau of Politico-Military Affairs has sought, in the past, to consolidate reviews related to weapons of mass destruction in its Office of Weapons Proliferation Policy, but, to date, has been unsuccessful due to agency inaction and a change in office management personnel.

[7]The Office of East-West Trade's role in the review process was also discussed in our report Arms Control: U.S. and International Efforts to Ban Chemical Weapons (GAO/NSIAD-91-317, Sept. 30, 1991).

Limited Enforcement of Export Controls

The Commerce Department's Office of Export Enforcement and the U.S. Customs Service enforce U.S. export laws on items used to make BW. However, BW export enforcement is, as noted by the Commerce Department in its reports to Congress, difficult because many of the items have legitimate medical and research uses, making it difficult to distinguish items that may be destined for BW purposes. Furthermore, because of their small size (often contained in test tube size receptacles), biological organisms can be easily concealed and transported. These factors have contributed to the limited enforcement of BW controls. Notwithstanding these problems, opportunities to improve enforcement exist, including making manufacturers and shippers of controlled items more aware of licensing requirements.

The Customs Service

The Customs Service is responsible for inspections of cargo and shipping documentation at shipping points. However, we were informed by Customs Service officials that enforcements have been limited to documentation checks on a few occasions and that inspection personnel have never sampled and analyzed a biological shipment because of a lack of scientific expertise and easily accessible safety equipment. However, they noted that if a need arises for an analysis of a biological shipment, the agency would request assistance from DOD or other U.S. agencies with the proper facilities.

Office of Export Enforcement

Commerce's Office of Export Enforcement is responsible for initiating pre-licensing checks to confirm a shipment destination's legitimacy, and post-shipment verifications, to identify a possible diversion of an item from its stated destination. These checks are based on the concerns of the Office or other agencies reviewing the licenses. In 1991, pre-licensing checks on microorganisms were initiated 28 times, and a post-shipment check was made once. Of these, only one case, involving a biological shipment to Brazil, ultimately resulted in the denial of a license. The Office also designed an outreach program to inform exporters of export requirements and to monitor exporter's compliance with regulations.

The Commerce Department has conducted several outreach visits targeting microorganism exporters and in May 1992 initiated an outreach program for biological equipment. However, an outreach program addressing toxins does not exist. Notably, as of the end of August 1992, 6 weeks after toxin licensing requirements took effect, no licenses for the export of toxins had been applied for by any U.S. company. In fact,

Commerce presently does not have any personnel responsible for tracking companies that export biological items, including toxins.

In one case, we found that a leading manufacturer of toxins exported several shipments of toxins without licenses until we contacted the firm in late August 1992, 6 weeks after controls were instituted. A licensing manager at the company told us that staff did not fully understand the regulations, and believed that only genetically-modified toxins were subject to control. We provided this information to the Office of Export Enforcement. In September, the Office requested that its regional staff initiate an investigation of the toxin-licensing practices of the manufacturer. In November 1992, a preliminary investigation disclosed that the manufacturer made 28 toxin shipments without the required licenses during the first 15 days the new regulations were in force.

Multilateral Controls Are Being Strengthened

In early 1989, the Australia Group began to address the problem of BW proliferation. Unlike the position it took on the BW Convention, the United States urged the 24 member Group to develop lists of microorganisms, toxins, and related manufacturing equipment that are most likely to be used in a BW program. In June 1992, tentative lists of items to be used for export licensing controls were developed by the Group, and at the recent meeting in Paris all the lists except the one concerned with plant pathogens were adopted. Although the Group is taking steps to improve controls on the export of BW items, the effectiveness of these controls will be limited because many BW items are available from nonmember countries.

Australia Group Efforts to Establish Export Controls

At the December 1992 meeting of the Australia Group, the members reached agreement to control through a licensing process the items that would most likely be used to develop BW. The Group adopted a list of human pathogens consisting of 37 microorganisms, 10 toxins, and associated genetically modified items, and a BW equipment list consisting of 7 types of items (see app. VII). In addition to these lists, the Group adopted an animal pathogen list consisting of 18 microorganisms and associated genetically modified agents. In June 1993, the members plan to discuss the progress made on national export controls that reflect the Australia Group lists. In this regard, the State Department said that it is working with other Australia Group member countries to ensure exports of items on the BW lists are adequately controlled. State also noted that to

the extent the Group members adopt varying standards of control, the effectiveness of the control lists would be undermined.

Complementing these efforts, the Group has also developed an "industry awareness" list of human pathogens consisting of 17 microorganisms and toxins, and a plant pathogen list consisting of 15 microorganisms and associated genetically modified items that could be useful for BW development. However, the Group is not presently considering applying controls to them.

Few Member Countries Invoke Unilateral Controls

Within the Australia Group, Germany is the only country, other than the United States, to have instituted comprehensive controls and legislation related to BW proliferation. Although described below, we did not evaluate the effectiveness of other countries' controls.

Germany instituted unilateral controls on biological microorganisms, toxins, and equipment in phases and, in large part, completed them in February 1992. Germany has also enacted a catch all clause, similar to the U.S. "catch all rule," whereby all goods are subject to federal authorization if the exporter is aware that they are being used in arms production in the recipient state. Controls have also been applied to German experts working abroad on arms projects in non-Western countries. In addition, the government has compiled a list of countries to which stricter controls are applied.

Germany has increased its government export control staff significantly and has instituted corporate senior management responsibility for export scrutiny. Board members, executive managers, or partners are designated as "export officers," who are made personally responsible for ensuring that their company has an efficient export control system.

An Australian Embassy official stated that the only other Group members that have instituted controls other than the United States and Germany are Switzerland, which has instituted controls on certain dual-use equipment, and Sweden and Finland, who have established controls on high-level biological containment facilities.

Conclusions

Once the planned adjustments to the BW equipment control list are completed, the United States will have assembled comprehensive lists of items for unilateral controls that address biological exports. However,

there are indications that there may be a lack of knowledge of, or compliance with, export controls by biological equipment and toxin exporters. In addition, in reviewing licensing procedures and interagency coordination, we believe some improvements could be made in the area of coordination. In particular, DOD, which has an expertise and a concern in BW issues, has not been receiving access to most BW licenses. Also, license coordination at State could be improved if responsibility were placed within the Department's Office of Weapons Proliferation, which is active in international proliferation issues.

Recognizing the limits of its unilateral export controls, the United States has assumed a leadership role in the multilateral Australia Group, which has made significant progress in developing lists of microorganisms, toxins, and equipment that are useful in BW programs. In December 1992, the lists were approved by the Group members, and each member country is expected to enact national export licensing controls for each item to prevent shipments going to countries developing or suspected of developing BW.

The Australia Group controls should form a good foundation for building an effective international control structure. However, given that most BW items are available outside of the Group, additional emphasis will need to be placed on recruitment of nongroup supplier countries or, at a minimum, the Group should encourage nongroup countries to adopt similar controls.

Recommendations

We recommend that the Secretary of Commerce

- take appropriate action to identify U.S. toxin exporters and to ensure that they fully understand the license controls that have been instituted and
- direct the Department's Office of Export Enforcement to prepare a full report on the shipment of any toxins subject to licensing controls that were shipped without a license to determine what appropriate action should be taken.

We further recommend that the Secretary of State review the feasibility of establishing the Office of Weapons Proliferation Policy, Bureau of Politico Military Affairs, as the focal point for the coordination of advisory license reviews of chemical weapons and BW items.

Convention on the Prohibition of the Development, Production, and Stockpiling of Bacteriological (Biological) and Toxin Weapons and on Their Destruction

The States Parties to this Convention,

Determined to act with a view to achieving effective progress towards general and complete disarmament, including the prohibition and elimination of all types of weapons of mass destruction, and convinced that the prohibition of the development, production and stockpiling of chemical and bacteriological (biological) weapons and their elimination, through effective measures, will facilitate the achievement of general and complete disarmament under strict and effective international control,

Recognizing the important significance of the Protocol for the Prohibition of the Use in War of Asphyxiating, Poisonous or Other Gases, and of Bacteriological Methods of Warfare, signed at Geneva on 17 June 1925, and conscious also of the contribution which the said Protocol has already made, and continues to make, to mitigating the horrors of war,

Reaffirming their adherence to the principles and objectives of that Protocol and calling upon all States to comply strictly with them,

Recalling that the General Assembly of the United Nations has repeatedly condemned all actions contrary to the principles and objectives of the Geneva Protocol of 17 June 1925,

Desiring to contribute to the strengthening of confidence between peoples and the general improvement of the international atmosphere,

Desiring also to contribute to the realization of the purposes and principles of the Charter of the United Nations,

Convinced of the importance and urgency of eliminating from the arsenals of States, through effective measures, such dangerous weapons of mass destruction as those using chemical or bacteriological (biological) agents,

Recognizing that an agreement on the prohibition of bacteriological (biological) and toxin weapons represents a first possible step towards the achievement of agreement on effective measures also for the prohibition of the development, production and stockpiling of chemical weapons, and determined to continue negotiations to that end,

Determined, for the sake of all mankind, to exclude completely the possibility of bacteriological (biological) agents and toxins being used as weapons,

Convinced that such use would be repugnant to the conscience of mankind and that no effort should be spared to minimize this risk,

Have agreed as follows:

Article I

Each State Party to this Convention undertakes never in any circumstances to develop, produce, stockpile or otherwise acquire or retain:

(1) Microbial or other biological agents, or toxins whatever their origin or method of production, of types and in quantities that have no justification for prophylactic, protective or other peaceful purposes;

(2) Weapons, equipment or means of delivery designed to use such agents or toxins for hostile purposes or in armed conflict.

Article II

Each State Party to this Convention undertakes to destroy, or to divert to peaceful purposes, as soon as possible but not later than nine months after the entry into force of the Convention, all agents, toxins, weapons, equipment and means of delivery specified in article I of the Convention, which are in its possession or under its jurisdiction or control. In implementing the provisions of this article all necessary safety precautions shall be observed to protect populations and the environment.

Article III

Each State Party to this Convention undertakes not to transfer to any recipient whatsoever, directly or indirectly, and not in any way to assist, encourage or induce any State, group of States or international organizations to manufacture or otherwise acquire any of the agents, toxins, weapons, equipment or means of delivery specified in article I of the Convention.

Article IV

Each State Party to the Convention shall, in accordance with its constitutional processes, take any necessary measures to prohibit and prevent the development, production, stockpiling, acquisition or retention of the agents, toxins, weapons, equipment and means of delivery specified in article I of the Convention, within the territory of such State, under its jurisdiction or under its control anywhere.

Article V

The States Parties to this Convention undertake to consult one another and to co-operate in solving any problems which may arise in relation to the objective of, or in the application of the provisions of, the Convention. Consultation and co-operation pursuant to this article may also be undertaken through appropriate international procedures within the framework of the United Nations and in accordance with its Charter.

Article VI

1. Any State Party to this Convention which finds that any other State Party is acting in breach of obligations deriving from the provisions of the Convention may lodge a complaint with the Security Council of the United Nations. Such a complaint should include all possible evidence confirming its validity, as well as a request for its consideration by the Security Council.

2. Each State Party to this Convention undertakes to cooperate in carrying out any investigation which the Security Council may initiate, in accordance with the provisions of the Charter of the United Nations, on the basis of the complaint received by the Council. The Security Council shall inform the States Parties to the Convention of the results of the investigation.

Article VII

Each State Party to the Convention undertakes to provide or support assistance, in accordance with the United Nations Charter, to any Party to the Convention which so requests, if the Security Council decides that such Party has been exposed to danger as a result of violation of the Convention.

Article VIII

Nothing in this Convention shall be interpreted as in any way limiting or detracting from the obligations assumed by any State under the Protocol for the Prohibition of the Use in War of Asphyxiating, Poisonous or Other Gases, and of Bacteriological Methods of Warfare, signed at Geneva on 17 June 1925.

Article IX

Each State Party to this Convention affirms the recognized objective of effective prohibition of chemical weapons and, to this end, undertakes to continue negotiations in good faith with a view to reaching early agreement on effective measures for the prohibition of their development, production and stockpiling and for their destruction, and on appropriate measures concerning equipment and means of delivery specifically designed for the production or use of chemical agents for weapons purposes.

Article X

1. The States Parties to this Convention undertake to facilitate, and have the right to participate in, the fullest possible exchange of equipment, materials and scientific and technological information for the use of bacteriological (biological) agents and toxins for peaceful purposes. Parties to the Convention in a position to do so shall also co-operate in contributing individually or together with other States or international organizations to the further development and application of scientific discoveries in the field of bacteriology (biology) for the prevention of disease, or for other peaceful purposes.

2. This Convention shall be implemented in a manner designed to avoid hampering the economic or technological development of States Parties to the Convention or international co-operation in the field of peaceful bacteriological (biological) activities, including the international exchange of bacteriological (biological) agents and toxins and equipment for the processing, use or production of bacteriological (biological) agents and toxins for peaceful purposes in accordance with the provisions of the Convention.

Article XI

Any State Party may propose amendments to this Convention. Amendments shall enter into force for each State Party accepting the amendments upon their acceptance by a majority of the States Parties to the Convention and thereafter for each remaining State Party on the date of acceptance by it.

Article XII

Five years after the entry into force of this Convention, or earlier if it is requested by a majority of Parties to the Convention by submitting a proposal to this effect to the Depositary Governments, a conference of States Parties to the Convention shall be held at Geneva, Switzerland, to review the operation of the Convention, with a view to assuring that the purposes of the preamble and the provisions of the Convention, including the provisions concerning negotiations on chemical weapons, are being realized. Such review shall take into account any new scientific and technological developments relevant to the Convention.

Article XIII

1. This Convention shall be of unlimited duration.

2. Each State Party to this Convention shall in exercising its national sovereignty have the right to withdraw from the Convention if it decides that extraordinary events, related to the subject-matter of the Convention, have jeopardized the supreme interests of its country. It shall give notice of such withdrawal to all other States Parties to the Convention and to the United Nations Security Council three months in advance. Such notice shall include a statement of the extraordinary events it regards as having jeopardized its supreme interests.

Article XIV

1. This Convention shall be open to all States for signature.[1] Any State which does not sign the Convention before its entry into force in accordance with paragraph 3 of this article may accede to it at any time.

2. This Convention shall be subject to ratification by signatory States. Instruments of ratification and instruments of accession shall be deposited

[1]On April 10, 1972, the Convention Was Opened for Signature and on March 26, 1975, the Convention Entered Into Force.

with the Governments of the Union of Soviet Socialist Republics, the United Kingdom of Great Britain and Northern Ireland and the United States of America, which are hereby designated the Depositary Governments.

3. This Convention shall enter into force after the deposit of instruments of ratification by twenty-two Governments, including the Governments designated as Depositaries of the Convention.

4. For States whose instruments of ratification or accession are deposited subsequent to the entry into force of this Convention, it shall enter into force on the date of the deposit of their instruments of ratification or accession.

5. The Depository Governments shall promptly inform all signatory and acceding States of the date of each signature, the date of deposit of each instrument of ratification or of accession and the date of the entry into force of this Convention, and of the receipt of other notices.

6. This Convention shall be registered by the Depositary Governments pursuant to Article 102 of the Charter of the United Nations.

Article XV

This Convention, the Chinese, English, French, Russian and Spanish texts of which are equally authentic, shall be deposited in the archives of the Depositary Governments. Duly certified copies of the Convention shall be transmitted by the Depositary Governments to the Governments of the signatory and acceding States.

Members and Nonmembers of the Biological Weapons Convention as of November 30, 1992

State (Country)	Date signed	Ratification[a] date	Accession[b] date
Afghanistan	Apr. 10, 1972	Mar. 26, 1975	
Albania	Not acceded		
Algeria	Not acceded		
Andorra	Not acceded		
Angola	Not acceded		
Antigua and Barbuda	Not acceded		
Argentina	Aug. 7, 1972	Nov. 27, 1979	
Armenia	Not acceded		
Australia	Apr. 10, 1972	Oct. 5, 1977	
Austria	Apr. 10, 1972	Aug. 10, 1973	
Azerbaijan	Not acceded		
Bahamas			Nov. 26, 1986
Bahrain			Oct. 28, 1988
Bangladesh			Mar. 12, 1985
Barbados	Feb. 16, 1973	Feb. 16, 1973	
Belarus	Apr. 10, 1972	Mar. 26, 1975	
Belgium	Apr. 10, 1972	Mar. 15, 1979	
Belize			Nov. 25, 1986
Benin	Apr. 10, 1972	Apr. 25, 1975	
Bermuda	Not acceded		
Bhutan			Jun. 8, 1978
Bolivia	Apr 10, 1972	Oct. 30, 1975	
Bosnia Herzegovina	Not acceded		
Botswana	Apr. 10, 1972	Feb. 5, 1992	
Brazil	Apr. 10, 1972	Feb. 27, 1973	
Brunei Darussalam			Jan. 31, 1991
Bulgaria	Apr. 10, 1972	Sept. 13, 1972	
Burkina Faso			Apr. 17, 1991
Burundi	Apr. 10, 1972	Not ratified	
Cambodia (Kampuchea)	Apr 10, 1972	Mar. 9, 1983	
Cameroon	Not acceded		
Canada	Apr. 10, 1972	Sept. 18, 1972	
Cape Verde			Oct. 20, 1977
Central African Republic	Apr. 10, 1972	Not ratified	
Chad	Not acceded		
Chile	Apr 10, 1972	Apr. 22, 1980	
China, People's Republic of			Nov 15, 1984

(continued)

State (Country)	Date signed	Ratification[a] date	Accession[b] date
China (Taiwan)	Apr. 10, 1972	Feb. 9, 1973	
Colombia	Apr. 10, 1972	Dec. 19, 1983	
Comoros	Not acceded		
Congo			Oct. 23, 1978
Costa Rica	Apr. 10, 1972	Dec. 17, 1973	
Cote D'Ivoire	May 23, 1972	Not ratified	
Croatia	Not acceded		
Cuba	Apr. 12, 1972	Apr. 21, 1976	
Cyprus	Apr. 10, 1972	Nov. 13, 1973	
Czech and Slovak Republics	Apr. 10, 1972	Apr. 30, 1973	
Dahomey	Apr. 10, 1972	Apr. 25, 1975	
Denmark	Apr. 10, 1972	Mar. 1, 1973	
Djibouti	Not acceded		
Dominica	Not acceded		
Dominican Republic	Apr. 10, 1972	Feb. 23, 1973	
Ecuador	June 14, 1972	Mar. 12, 1975	
Egypt	Apr. 10, 1972	Not ratified	
El Salvador	Apr. 10, 1972	Dec. 31, 1991	
Equatorial Guinea		Jan. 16, 1989	
Estonia	Not acceded		
Ethiopia	Apr. 10, 1972	June 26, 1975	
Fiji	Feb. 22, 1973	Sept. 4, 1973	
Finland	Apr. 10, 1972	Feb. 4, 1974	
France			Sept. 27, 1984
Gabon	Apr. 10, 1972	Not ratified	
Gambia, The	Nov. 9, 1972	Not ratified	
Germany	Apr. 10, 1972	Apr. 7, 1983	
Georgia	Not acceded		
Ghana	Apr. 10, 1972	June 6, 1975	
Greece	Apr. 12, 1972	Dec. 10, 1975	
Grenada			Oct. 22, 1986
Guatemala	May 9, 1972	Sept. 19, 1973	
Guinea	Not acceded		
Guinea-Bissau			Aug. 20, 1976
Guyana	Jan. 3, 1973	Not ratified	
Haiti	Apr. 10, 1972	Not ratified	
Holy See, The	Not acceded		
Honduras	Apr. 10, 1972	Mar. 14, 1979	

(continued)

State (Country)	Date signed	Ratification[a] date	Accession[b] date
Hungary	Apr. 10, 1972	Dec. 27, 1972	
Iceland	Apr. 10, 1972	Feb. 15, 1973	
India	Jan. 15, 1973	July 15, 1974	
Indonesia	Jun. 20, 1972	Apr. 1, 1992	
Iran	Apr. 10, 1972	Aug. 22, 1973	
Iraq	May 11, 1972	Apr. 18, 1991	
Ireland	Apr. 10, 1972	Oct. 27, 1972	
Israel	Not acceded		
Italy	Apr. 10, 1972	May 30, 1975	
Jamaica			Aug. 13, 1975
Japan	Apr. 10, 1972	June 8, 1992	
Jordan	Apr. 10, 1972	June 2, 1975	
Kazakhstan	Not acceded		
Kenya			Sept. 30, 1981
Kiribati	Not acceded		
Korea, Democratic People's Republic of			Mar. 13, 1987
Korea, Republic of	Apr. 10, 1972	June 25, 1987	
Kuwait	Apr. 14, 1972	July 18, 1972	
Kyrgyzstan	Not acceded		
Latvia	Not acceded		
Laos	Apr. 10, 1972	Mar. 22, 1973	
Lebanon	Apr. 10, 1972	June 13, 1975	
Lesotho	Apr. 10, 1972	Not ratified	
Liberia	Apr. 10, 1972	Not ratified	
Libya			Jan. 19, 1982
Liechtenstein			May 30, 1991
Lithuania	Not acceded		
Luxembourg	Apr. 12, 1972	Mar. 23, 1976	
Madagascar	Oct. 13, 1972	Not ratified	
Malawi	Apr. 10, 1972	Not ratified	
Malaysia	Apr. 10, 1972	Sept. 26, 1991	
Maldives	Not acceded		
Mali	Apr. 10, 1972	Not ratified	
Malta	Sept. 11, 1972	Apr. 7, 1972	
Marshall Islands	Not acceded		
Mauritania	Not acceded		
Mauritius	Apr. 10, 1972	Aug. 7, 1972	
Mexico	Apr. 10, 1972	Apr. 8, 1974	

(continued)

State (Country)	Date signed	Ratification[a] date	Accession[b] date
Moldova	Not acceded		
Monaco	Not acceded		
Mongolia	Apr. 10, 1972	Sept. 5, 1972	
Morocco	May 3, 1972	Not ratified	
Mozambique	Not acceded		
Myanmar (Burma)	Apr. 10, 1972	Not ratified	
Namibia	Not acceded		
Nauru	Not acceded		
Nepal	Apr. 10, 1972	Not ratified	
Netherlands	Apr. 10, 1972	June 22, 1981	
New Zealand	Apr. 10, 1972	Dec. 13, 1972	
Nicaragua	Apr. 10, 1972	Aug. 7, 1975	
Niger	Apr. 21, 1972	June 23, 1972	
Nigeria	Dec. 6, 1972	July 3, 1973	
Norway	Apr. 10, 1972	Aug. 1, 1973	
Oman			Apr. 8, 1992
Pakistan	Apr. 10, 1972	Oct. 3, 1974	
Palau	Not acceded		
Panama	May 2, 1972	Mar. 20, 1974	
Papua New Guinea			Mar. 16, 1981
Paraguay			June 9, 1976
Peru	Apr. 10, 1972	June 11, 1985	
Philippines	Apr. 10, 1972	May 21, 1973	
Poland	Apr. 10, 1972	Jan. 25, 1973	
Portugal	June 29, 1972	May 15, 1975	
Qatar	Nov. 14, 1972	Apr. 17, 1975	
Romania	Apr. 10, 1972	July 25, 1979	
Russia	Apr. 10, 1972	Mar. 26, 1975	
Rwanda	Apr. 10, 1972	May 20, 1975	
St. Kitts and Nevis			Apr. 2, 1991
St. Lucia			Nov. 26, 1986
St. Vincent and the Grenadines	Not acceded		
San Marino	Sept. 12, 1972	Mar. 17, 1975	
Sao Tome and Principe			Aug. 24, 1979
Saudi Arabia	Apr. 12, 1972	May 24, 1972	
Senegal	Apr. 10, 1972	Mar. 26, 1975	
Serbia-Montenegro (Formerly Yugoslavia)	Apr. 10, 1972	Oct. 25, 1973	

(continued)

State (Country)	Date signed	Ratification[a] date	Accession[b] date
Seychelles			Oct. 16, 1979
Sierra Leone	Nov. 7, 1972	June 29, 1976	
Singapore	June 19, 1972	Dec. 2, 1975	
Slovenia			Aug. 20, 1992
Solomon Islands			Sept. 4, 1981
Somalia	June 3, 1972	Not ratified	
South Africa	Apr. 10, 1972	Nov. 3, 1975	
Spain	Apr. 10, 1972	June 20, 1979	
Sri Lanka	Apr. 10, 1972	Nov. 18, 1986	
Sudan	Not acceded		
Suriname	Not acceded		
Swaziland			June 18, 1991
Sweden	Feb. 27, 1975	Feb. 5, 1976	
Switzerland	Apr. 10, 1972	May. 4, 1976	
Syria	Apr. 14, 1972	Not ratified	
Tajikistan	Not acceded		
Tanzania	Aug. 16, 1972	Not ratified	
Thailand	Jan. 17, 1973	May 28, 1975	
Trinidad and Tobago	Not acceded		
Togo	Apr. 10, 1972	May 18, 1973	
Tonga			Sept. 30, 1981
Tunisia	Apr. 10, 1972	May 18, 1973	
Turkey	Apr. 10, 1972	Nov. 5, 1974	
Turkmenistan	Not acceded		
Tuvalu	Not acceded		
Uganda	Not acceded		
Ukraine	Apr. 10, 1972	Mar. 26, 1975	
United Arab Emirates[c]	Sept. 28, 1972	Not ratified	
United Kingdom	Apr. 10, 1972	Mar. 26, 1975	
United States	Apr. 10, 1972	Mar. 26, 1975	
Uruguay			Apr. 6, 1981
Uzbekistan	Not acceded		
Vanuatu			Oct. 12, 1990
Venezuela	Apr. 10, 1972	Oct. 18, 1978	
Vietnam			June 20, 1980
Western Samoa	Not acceded		
Yemen	Apr. 10, 1972	June 1, 1979	

(continued)

State (Country)	Date signed	Ratification[a] date	Accession[b] date
Zaire	Apr. 10, 1972	Jan. 28, 1977	
Zambia	Not acceded		
Zimbabwe			Nov. 5, 1990

[a]Ratification applies to a country that signed the Convention during the period it was open for signature (1972-1975) and subsequently, as a result of legislative approval deposited its instrument of ratification with one of the depository nations.

[b]Accession applies to those countries that agree to accept the Convention after it has been closed for signature, by providing an instrument of acceptance with one of the depository nations.

[c]The United Arab Emirates which did not ratify the Convention is listed as one country.

Third Review Conference Mandate for the Verification Study

The Conference[1] determined to strengthen the effectiveness and improve the implementation of the Convention and recognizing that effective verification could reinforce the Convention, decided to establish an Ad Hoc Group of Governmental Experts open to all States parties to identify and examine potential verification measures from a scientific and technical standpoint.

The Ad Hoc Group shall meet in Geneva for the period March 30 to April 10, 1992 [2] and will hold additional meetings as appropriate to complete its work as soon as possible, preferably before the end of 1993. In accordance with the agreement reached in the Preparatory Committee, the Ad Hoc Group is to be chaired by the Hungarian Ambassador, who shall be assisted by two vice-chairmen, to be elected by the States parties participating in the first meeting.

The Ad Hoc Group shall seek to identify measures which could determine

- whether a State party [3] is developing, producing, stockpiling, acquiring or retaining microbial or other biological agents or toxins, of types and in quantities that have no justification for prophylactic, protective or peaceful purposes and
- whether a State party is developing, producing, stockpiling, acquiring or retaining weapons, equipment or means of delivery designed to use such agents or toxins for hostile purposes or in armed conflict.

Such measures could be addressed singly or in combination. Specifically, the Group shall seek to evaluate potential verification measures, taking into account the broad range of types and quantities of microbial and other biological agents and toxins, whether naturally occurring or altered, which are capable of being used as means of warfare.

To these ends, the Ad Hoc Group could examine potential verification measures of the following main criteria:

- Their strengths and weaknesses based on, but not limited to, the amount and quality of information they provide, and fail to provide;
- Their ability to differentiate between prohibited and permitted activities;
- Their ability to resolve ambiguities about compliance;

[1]The Third Review Conference was held in Geneva from September 9-27, 1991.

[2]The Group of Governmental Experts met as scheduled in Geneva.

[3]A State Party is a Convention member.

- Their technology, material, manpower and equipment requirements;
- Their financial, legal, safety and organizational implications; and
- Their impact on scientific research, scientific cooperation, industrial development and other permitted activities, and their implications for the confidentiality of commercial proprietary information.

In examining potential verification measures, the Ad Hoc Group should take into account data and other information relevant to the Convention provided by the States Parties.

The Ad Hoc Group shall adopt by consensus a report taking into account views expressed in the course of its work. The report of the Group shall be a description of its work on the identification and examination of potential verification measures from a scientific and technical standpoint, according to this mandate.

The report of the Ad Hoc Group shall be circulated to all States Parties for their consideration. If a majority of States Parties ask for the convening of a conference to examine the report, by submitting a proposal to this effect to the Depository Governments, such a conference will be convened. In such a case, the conference shall decide on any further action. The conference shall be preceded by a preparatory committee.

Visits to U.S., United Kingdom, and Russian Biological Facilities

On September 14, 1992, a joint U.S., United Kingdom (U.K.), and Russian statement was issued, announcing an agreement for visits and a series of other steps to begin to resolve the issue of Russian non-compliance with the BW Convention. The visits are to take place at civilian and military biological facilities and are on a quid pro quo basis. The announcement was preceded by a lengthy, high-level diplomatic dialogue between the three nations following Russian admissions that it and the former Union of Soviet Socialist Republic (U.S.S.R.) violated the BW Convention. In addition, the United States had conditioned disarmament assistance for Russia on compliance with all existing treaty obligations.

U.S.S.R. Convention Violations

The Arms Control and Disarmament Agency (ACDA), in several reports [1] to Congress, stated that the Soviet Union, a Convention member, was violating the Convention, and cited as evidence the accidental release of anthrax spores at Sverdlovsk in 1979. At the Convention's Third Review Conference in September 1991, the Director of ACDA stated "We believe the Soviet Union and other states have extensive active biological weapons programs in violation of the BW Convention." The U.K. and France also noted their concern about Soviet compliance with the Convention during the Review Conference.

Russian Acknowledgement of Past Violations and U.S. Certification

In December 1991, Congress authorized $400 million in assistance to the Soviets to aid in the dismantlement of nuclear and chemical weapons, but imposed several conditions before the funds could be released. One of these required a certification by the President to Congress that the Soviet Union, any of its republics, or any successor entity, is committed to complying with all relevant arms control agreements.

On April 8, 1992, the State Department made the certification to Congress on behalf of the President. In support of the certification, the State Department noted that recent public statements by the Russian president about the BW Convention "give important evidence of a serious commitment to resolve a long-standing Soviet violation". One of the statements cited stated that the Russian president acknowledged a lag in implementation of the Convention and that Russia favors the rigorous implementation of the BW Convention.

[1] Annual reports to Congress on Adherence to and Compliance with Agreements as Required by Section 52 of the Arms Control and Disarmament Act.

The Russian Ambassador to the Conference on Disarmament in Geneva informed us that Russia admitted having an offensive BW program from the 1940s to March 1992, and indicated the program has now ended. He also said Russia maintained no stocks of BW.

In July 1992, the President stated that the United States will continue to work with authorities from Russia and other states toward a number of objectives. Included in these objectives was the dismantlement or destruction of Russian BW facilities or their conversion to the production of vaccines and other pharmaceutical products. Such assistance requires that Russia is in full compliance with the BW Convention. However, an ACDA official stated, in September 1992, that the Russian official responsible for BW dismantling claimed that Russia has not requested assistance in this area.

U.S., U.K., and Russian Agreement on Visits to Biological Facilities

On September 14, 1992, a joint U.S., U.K., and Russian statement on BW was issued about compliance with the BW Convention. In the statement, Russia reconfirmed its termination of an illegal offensive BW program, the dismantling of experimental technology lines for the production of biological agents, and the closure of the BW testing facility. According to the statement, Russia also agreed to allow officials from the United States and the U.K. to visit any non-military biological site at any time, but, after initial visits to Russian facilities, there would be comparable visits to U.S. and U.K. facilities on the same basis. An ACDA official said the initial visits to Russian facilities will start as soon as the team of experts can be assembled and administrative arrangements can be worked out. Further, the three governments agreed to create working groups, including experts to address the following nine areas:

(1) Visits to any military biological facility, on a reciprocal basis, to remove ambiguities, subject to the need to respect confidential information on the basis of agreed principles. Such visits would include unrestricted access, sampling, interviews with personnel, and audio and video taping.

(2) A review of potential measures to monitor compliance with the BW Convention and to enhance confidence in that compliance.

(3) A review of potential modalities for testing such measures.

(4) An examination of the physical infrastructure of biological facilities in the three countries to determine jointly whether there is specific equipment or excess capacity inconsistent with their stated purpose.

(5) Consideration of cooperation in developing BW defense.

(6) Examination of ways to promote cooperation and investment in the conversion of BW facilities, including visits to already converted facilities.

(7) Consideration of an exchange of information on a confidential, reciprocal basis concerning past offensive programs not recorded in detail in the declarations to the United Nations (U.N.).

(8) The provision of periodic reports to their legislatures and publics describing biological research and development activities.

(9) The encouragement of exchanges of scientists at biological facilities on a long-term basis.

The ACDA official emphasized that the agreement allows visits, which should not be confused with inspections, and that the experts may not be able to make decisive judgements about Russia's termination of its offensive BW program. The visits will allow a level of transparency into the existing facilities and greater confidence in statements made by Russia on its BW program.

U.N. Inspections in Iraq of Suspected Biological Weapons Facilities

In March 1991, the Director of Naval Intelligence stated in public hearings before the House Armed Service Committee on Intelligence Issues that Iraq had developed an offensive BW capacity. At that time, Iraq was a signatory of the Convention but had not ratified it. Under the terms of the Gulf War cease-fire contained in U.N. Security Council Resolution 687 of April 3, 1991, Iraq was requested to ratify the Convention. Iraq did so on April 18, 1991.

The U.N. Resolution also mandated the establishment of the U.N. Special Commission (UNSCOM) to carry out immediate on-site inspections of Iraq's biological and other weapons capabilities. Also during the second week of August 1991, the Security Council passed resolution 707, which further strengthened the authority of UNSCOM by more specifically detailing Iraq's obligations under Resolution 687. For example, Iraq was directed to allow the inspection teams immediate, unconditional, and unrestricted access to any and all areas, facilities, equipment, records, and means of transportation that they wish to inspect.

The first BW inspection took place about 4 months after the war. It was conducted during the first week of August and centered on a research center located at Salman Pak (about 21 miles from the center of Baghdad), a suspected BW research and development center. As a result of the inspection, UNSCOM concluded that the biological research activities that were undertaken at that site could have been used for both defensive and offensive purposes, but that the primary purpose was offensive research.

UNSCOM stated in its report that the facilities at Salman Pak, which existed before allied bombings, had the capabilities to produce sufficient anthrax, botulinum toxin, and clostridium perfringens epsilon toxin to service a limited weaponization program and to sustain terrorist activities. Its conclusions were based on multiple factors, such as the range of microbiological agents possessed at the site, Iraq's deliberate destruction of equipment that could be used for BW programs, and the training provided the Iraqi staff.

The second inspection (which also addressed areas other than BW) was conducted from September 20 to October 3, 1991, at two sites in Baghdad and eight other locations. Included were a pharmaceutical facility, a vaccine plant, and a single-cell protein facility. The UNSCOM inspectors found no BW, warheads, or facilities for filling warheads, and no evidence at any of the 10 sites that biological agents intended for weaponization had been produced. However, the inspectors noted that the single-cell protein

facility at Al Hakam may have been planned as the next stage in Iraq's BW program and recommended future monitoring of the facility.

A third inspection was conducted from November 18 to December 1, 1991, and consisted of an examination of a number of undeclared sites and facilities for evidence of either chemical weapons or BW activities. The inspections were carried out by surprise, involving unannounced helicopter arrivals at sites and facilities. No evidence was found that the facilities or sites were used for BW or chemical weapons purposes.

The lessons learned from three visits were discussed at the Ad Hoc Group of Governmental Experts meeting in the spring of 1992. A paper prepared by the U.K. noted that during an inspection, there should be a broad range of expertise that could identify the significance of information and material uncovered. It also noted that it is possible to make a confident assessment about biological activities through several types of indicators without actually finding a BW.

Discussion With a U.N. Inspector and a U.N. Official

A French microbiologist participated in two U.N. inspections, and informed us that he does not believe Iraq had an offensive BW production capability. He cited as evidence that the Iraq fermenters were used for vaccine production and were not suitable for BW production (fermenters are a key element in BW production). He added that while Iraqi storage facilities could have been used for BW, they were actually used for meat storage. Nevertheless, he said he and other inspectors were still engaged in analyzing the information obtained from the Iraq inspections.

A UNSCOM official at the U.N. stated that Iraq had a minor offensive BW research and development program that did not involve massive production. He noted that the United States had pressured UNSCOM to continue searching for a BW program, but that the investigators have basically run out of likely sites to inspect. However, they planned to continue the effort.

U.S. Views of Iraq's BW Program and U.N. Inspections

In September 1991, the Director of ACDA stated before the Convention's Third Review Conference that Iraq has clearly had a BW program, even though Iraqi officials denied it. In April 1992, another ACDA official voiced a similar opinion. He stated that while the U.N. inspections, with their unprecedented level of intrusiveness, found no conclusive evidence of an

offensive BW program, the United States still believes Iraq had maintained an offensive program.

Confidence Building Measures

To build up confidence among members of the BW Convention that the Treaty is not being circumvented, the Second Review Conference in 1986 agreed on a series of voluntary measures to enhance the transparency of activities involving biological agents and toxins. These measures are as follows:

- Exchange of data, including name, location, scope, and general description of activities on research centers and laboratories that meet very high national or international safety standards established for handling, for permitted purposes, biological materials that pose a high individual and community risk or specialize in permitted biological activities directly related to the Convention.
- Exchange of information on all outbreaks of infectious diseases and similar occurrences caused by toxins that seem to deviate from the normal pattern such as type, development, place, or time of occurrence. If possible, the information provided would include, as soon as it is available, data on the type of disease, approximate area affected, and the number of cases.
- Encouragement of publication of results of biological research directly related to the Convention, in scientific journals generally available to Convention members, as well as promotion of knowledge gained in this research for permitted purposes.
- Active promotion of contacts between scientists engaged in biological research directly related to the Convention, including exchanges for joint research on a mutually agreed basis.

At the Third Review Conference the members expanded the first CBM requirement to include the exchange of information on national biological research and development programs (previously the requirement applied only to non-government activities), added three additional CBMs and requested countries that had nothing to report to so state each year. The expanded CBMs requested members to provide information on

- whether they have legislation, regulations, or other measures, and to report any amendment to legislation/regulations or other measures as it relates to article 1 of the Convention (see app. I);
- past activities in offensive and/or defensive biological research and development programs since January 1, 1946; and
- all facilities, both government and nongovernmental, producing vaccines licensed by the member country for the protection of humans.

Biological Weapons Items Controlled by the United States and Those to Be Controlled by the Australia Group Members

U.S. Microorganism and Toxin Controls

Viruses	A1. Chikungunya virus A2. Congo-Crimean haemorrhagic fever virus A3. Dengue fever virus A4. Eastern equine encephalitis virus A5. Ebola virus A6. Hantaan virus A7. Junin virus A8. Lassa fever virus A9. Lymphocytic choriomeningitis virus A10. Machupo virus A11. Marburg virus A12. Monkey pox virus A13. Rift Valley fever virus A14. Tick-borne encephalitis virus (Russian Spring-Summer encephalitis virus) A15. Variola virus A16. Venezuelan equine encephalitis virus A17. Western equine encephalitis virus A18. White pox A19. Yellow fever virus A20. Japanese encephalitis virus
Rickettsiae	B1. Coxiella burnetti B2. Rickettsia quintana B3. Rickettsia prowasecki B4. Rickettsia rickettsii
Bacteria	C1. Bacillus anthracis C2. Brucella abortus C3. Brucella melitensis C4. Brucella suis C5. Chlamydia psittaci C6. Clostridium botulinum C7. Francisella tularensis C8. Pseudomonas mallei

	C9. Pseudomonas pseudomallei C10 Salmonella typhi C11. Shigella dysenteriae C12. Vibrio cholerae C13. Yersinia pestis
Toxins	E1. Botulinum toxins E2. Clostridium perfringens toxins E3. Conotoxin E4. Ricin E5. Saxitoxin E6. Shiga toxin E7. Staphylococcus aureus toxins E8. Tetrodotoxin E9. Verotoxin E10. Microcystin (Cyanogenosin)
Genetically Modified Microorganisms	D1. Genetically modified microorganisms that contain DNA sequences associated with pathogenicity arising from aetiological agents, toxins, and source organisms identified here. D2. Microorganisms genetically modified to produce any of the toxins listed.

U.S. Equipment Controls

Current	1. Biohazard containment equipment 2. Detection or assay systems for biological agents 3. Equipment for the microencapsulation of live microorganisms 4. Complex media for the growth of microorganisms

Planned

1. Complete Containment Facilities at P3, P4 containment level

2. Fermenters with capacity equal to or greater than 300 liters

3. Centrifugal Separators with flow rate greater than 100 liters an hour

4. Cross-flow filtration equipment equal to or greater than 5 square meters

5. Freeze-drying equipment

6. Equipment related to P3, P4 facilities such as protective suits and class III safety cabinets

7. Aerosol inhalation chambers

1. The U.S. microorganism and toxin control list, effective July 15, 1992, was developed in conjunction with the Australia Group. The Group in December 1992 approved the list. The criteria for developing the list was as follows:

(1) An agent has been used in warfare
(2) An agent has been developed for warfare
(3) An agent has been sought or acquired by a proliferant
(4) An agent that could incapacitate or kill and has a short incubation period
(5) An agent which could be mass produced
(6) An agent which is infectious in aerosol form
(7) An agent to which a population is susceptible

If an agent met either criterion 1 or 2, it was included in the list of agents to be controlled. If the agent met the majority of these criterion (3 to 7) it was likely included on the core list. These criteria were adjusted somewhat for toxins with the toxicity of the agent being considered under criteria 4 and the effectiveness of the agent being considered under criterion 6.

2. Two of the toxins (saxitoxin and ricin) are also included on a schedule of items subject to control in the Draft Convention on the Prohibition of the Development, Production, Stockpiling, and Use of Chemical Weapons and their Destruction, dated August 10, 1992.

3. The U.S. has begun a process to change existing equipment controls to reflect those planned for control by the Australia Group which was approved by the Group at its December 1992 meeting. The criteria established by the Group for inclusion on the equipment list are as follows:

(1) Suitability for development, production, or dissemination of biological weapons agents and

(2) Restricted use of dual-use equipment makes controls effective—particularly if there is evidence the equipment has been sought by a proliferator.

Licensing Procedures and Coordination for Biological Weapons Items

Licensing Procedures

When a license application is received at the Commerce Department's Office of Export Licensing, Bureau of Export Administration, it is logged into a computer database and assigned a case number. The first review of an application for items of concern is automatically addressed by the computer by comparing aspects of the application, such as destination or consignee, with computer-based lists, which are derived from intelligence information. If a match occurs, the license is immediately referred to in-house investigators for review and will not be issued until the review is completed. Part of the investigator's review can include a referral to the Central Intelligence Agency (CIA).

After the initial screening, an application's review is assigned to a licensing officer who refers to the appropriate directives and regulations to determine its disposition. If the destination of the export is to one of 30 countries that is developing or is suspected of developing BW, the officer will refer the application to the CIA's Non-Proliferation Center (NPC) and other agencies for review. In addition, Commerce refers to the NPC all BW license applications daily with magnetic tapes. In a limited number of cases, U.S. personnel overseas may visit the end-user of the export to ensure the legitimacy of the transaction prior to licensing approval.

In accordance with a National Security Council (NSC) directive of December 1990, Commerce must act upon the license applications within 60 days of the application's submission. When disputes arise over the issuance of a license, up to an additional 105 days may be allowed for disposition of a license application as it advances through several interagency reviews.

License Coordination

In addition to referring license applications to the CIA, Commerce coordinates review of export license applications with the Department of State and, to a limited degree, Department of Defense (DOD). The State Department has a statutory right to review all license applications that are controlled for foreign policy reasons. However, with respect to biological items, it has requested that Commerce forward only those applications destined for 30 countries (the list of countries is classified).

State's Office of East-West Trade, Bureau of Economic and Business Affairs, receives the licenses from Commerce and provides copies to the Bureau of Intelligence and Research; the Near East and South Asia Bureau; the Office of Weapons Proliferation Policy, Bureau of Politico-Military Affairs; and the Arms Control and Disarmament Agency

(ACDA). However, an effort to provide direct electronic distribution of cases is close to completion. The recipient offices usually contact the CIA for assistance in their review. When the reviews are complete (usually within the 10-day target limit established by Economic and Business Affairs), and if there are no disagreements on the disposition of the case, Economic and Business Affairs transmits to Commerce State Department's recommendation. If a denial is recommended, the rationale for such is conveyed.

Concurrent with State's review, DOD may also review a license application. In a November 1990 executive order on chemical and biological weapons (BW) proliferation, the President required the Secretary of Commerce to coordinate any license applications with the Secretary of Defense. However, the only license applications that are subject to DOD review are those involving exports destined for Iran, Iraq, Syria, Libya, and Jordan. This in accordance with inter-agency agreements effective in early 1991. In mid-October 1992, the Department of Commerce circulated for interagency comment a proposed revision to the referral procedures for export licenses. Under this proposal, DOD would receive license applications for exports to a number of additional countries. The Defense Technology Security Administration responded positively to the proposal. However, a DOD official in the Office of International Security Affairs said that in his planned response to Commerce he will state that DOD should have the option to access all BW licenses.

License applications may also be reviewed by the Shield Group which is an interagency committee comprised of representatives from Commerce, State, DOD, ACDA, NPC, Customs Service, and the National Security Agency. It had been operating informally for nearly 2 years, but on September 24, 1992, it gained formal approval for its charter from the NSC. It is co-chaired by State's Bureaus of Politico-Military Affairs and Near East and South Asia Affairs and meets "as required," which in the past has occurred every 2 to 4 weeks. It maintains three main functions: intelligence exchange; interdiction (that is stopping shipments of items by other countries that will aid weapons proliferation); technical reviews of, and advice on, chemical and biological license applications when there has been disagreements between reviewing agencies as to their disposition. Also, according to Commerce officials, the Group has the authority to request any BW license applications.

When consensus cannot be reached by the Shield Group, the application is referred to the Advisory Committee on Export Policy, an

assistant-secretary level interagency committee. However, If timely resolution is not reached, the cabinet-level Export Administration Review Board will seek to resolve the issue. Participating reviewing agencies also have the option to refer a case to the NSC.

United States Sanctions Legislation

The Chemical and Biological Weapons Control and Warfare Elimination Act of 1991, [1] 102-182, requires (1) export licenses for chemical weapons and biological weapons (BW) goods and technology for countries that have no arrangement with the United States to control these goods (2) the Secretary of Commerce to establish and maintain a list of relevant materials and technologies subject to export controls (3) the imposition of sanctions against foreign persons that engage in certain activity relating to chemical weapons and BW proliferation, and (4) the imposition of sanctions against countries that use chemical weapons and BW in violation of international law or use lethal chemical weapons and BW in violation of international law or use lethal chemical weapons and BW against their own nationals. In addition, the law requires mandatory sanction penalties for any country that uses chemical weapons or BW against its citizenry or internationally.

The legislation states that if the President determines that a foreign nation has used chemical weapons or BW, a two-tier sanction regime must be invoked. The initial sanctions require the United States to: (1) terminate all foreign assistance, except humanitarian aid; (2) terminate sales of defense articles and services and deny licenses for munitions list exports; (3) terminate all foriegn military financing; (4) deny U.S. Government credit or other financial assistance; and (5) prohibit the export of national security-sensitive goods and technology to the sanctioned entity.

If, after 90 days, the President is not able to certify that the nation in question has ceased using chemical weapons and BW and has provided assurance against future chemical weapons or BW use, and such assurance can be verified by on-site inspections, the President must impose three of the following six sanctions: (1) cessation of support for multilateral development bank assistance; (2) prohibition of U.S. bank loans; (3) prohibition of all U.S. exports; (4) import restrictions; (5) downgrading or suspension of diplomatic relations; or (6) termination of national air carrier landing rights. The President may waive the sanctions, if it is essential to the national security, after providing Congress with 15 days notice. The President may also waive sanctions upon certification that there has been a fundamental change in the leadership and policies of the government after providing Congress with 20 days notice.

[1] The act contains certain provisions dealing with chemical and biological weapons export controls and sanctions, including provisions that purport to amend the lapsed Export Administration Act.

Major Contributors to This Report

National Security and International Affairs Division, Washington, D.C.,	Thomas J. Schulz, Associate Director Louis H. Zanardi, Assistant Director Raymond A. Plunkett, Evaluator-in-Charge Beryle Randall, Evaluator

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