

GAO

Report to the Chairman, Committee on
Foreign Relations, U.S. Senate

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ARMS CONTROL

Status of U.S.-Russian Agreements and the Chemical Weapons Convention





United States
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National Security and
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The Honorable Claiborne Pell
Chairman, Committee on Foreign
Relations
United States Senate

Dear Mr. Chairman:

This report discusses the status and costs of two agreements between the United States and Russia and the Chemical Weapons Convention, which are directed at ridding the world of chemical weapons.

Unless you publicly announce its contents earlier, we plan no further distribution of this report until 6 days from its issue date. At that time, we will send copies of this report to the Secretaries of State, Defense, and Energy; the Director of the Arms Control and Disarmament Agency; and other interested congressional committees. Copies will also be made available to others upon request.

If you or your staff have any questions concerning this report, please call me on (202) 512-4128. Major contributors to this report are listed in appendix II.

Sincerely yours,

Joseph E. Kelley
Director-in-Charge
International Affairs Issues

Executive Summary

Purpose

Since 1928, an international treaty has banned the use of chemical weapons but not their development and production. The number of countries suspected of having or developing such weapons has increased to 24. A new multilateral treaty, the Chemical Weapons Convention, would require the destruction of chemical weapons and the means to produce them. The United States signed the convention in 1993 but has not ratified it yet. Earlier, the United States signed bilateral agreements with Russia aimed at destroying both countries' chemical weapon stockpiles.

To assist the Senate Committee on Foreign Relations in its deliberations over ratification of the Chemical Weapons Convention, GAO evaluated (1) the progress made in implementing the bilateral agreements with Russia, (2) the status of the Chemical Weapons Convention, and (3) the costs incurred by the United States in preparing for and implementing the treaties.

Background

Chemical weapons are instruments of mass destruction that can kill and maim large numbers of people. In 1989 and 1990, the United States and Russia entered into two interrelated agreements aimed at destroying their chemical weapon stockpiles. Both countries have large stockpiles. A major objective of these agreements was to facilitate ongoing negotiations on the Chemical Weapons Convention.

More than 20 years after negotiations began, the convention was opened for signature in January 1993. It has been signed by most countries in the world and now awaits ratification. The convention would restrict signatory countries from developing, producing, acquiring, stockpiling, retaining, transferring, or using chemical weapons; require the destruction of existing chemical weapon stockpiles and facilities; control the export of items used in the production of chemical weapons; and provide for inspections to ensure compliance. If ratified by 65 countries, the treaty could enter into force as soon as January 1995.

Monitoring implementation of the convention will be an international agency, the Hague-based Organization for the Prohibition of Chemical Weapons. A predecessor organization, the Preparatory Commission, is working to facilitate the entry into force of the convention and to establish the permanent agency.

Results in Brief

Significant technical, political, and financial obstacles have to date prevented Russia from beginning to destroy its chemical weapons. However, Russia and the United States have begun to make progress in a number of areas. For instance, the two countries agreed that a U.S. contractor will develop a comprehensive plan for the Russian chemical weapon destruction program. Nevertheless, much uncertainty still exists over Russia's ability to safely destroy its chemical weapons.

Although most countries have signed the Chemical Weapons Convention, several key countries suspected of having or developing chemical weapons have not signed it. Without their membership, it will be difficult for the convention to meet its goal of destroying the world's stockpile of chemical weapons and dismantling the facilities that make them. Furthermore, only a small number of signatory countries have submitted their instruments of ratification. As a result, it is unlikely the convention will enter into force at the earliest possible date of January 1995.

Among signatory states, the United States has funded the largest and most ambitious research and development program aimed at helping to develop an effective international verification regime. Future plans call for the United States to spend significantly more resources to help refine and improve the convention's verification operations. However, with the exception of inspector training, no plans exist to develop an equitable burden-sharing arrangement to distribute at least a portion of these costs among other signatory states. Within the U.S. government, all three military services have developed workable methods for providing timely access to installation site diagrams, which will be needed to comply with the treaties. However, the Air Force's approach is much less expensive than that of the Army and Navy. Finally, the Arms Control and Disarmament Agency has been appropriated funds that are in excess of requirements to support the Preparatory Commission.

Principal Findings

Implementation of Bilateral Agreements Has Progressed Slowly

Under the first U.S.-Russian agreement, signed in 1989, the two countries are to exchange data on chemical weapon stockpiles and facilities and verify the data. The second agreement, signed in 1990, calls for the destruction of most chemical weapons and for verification inspections. It

lays out a schedule for chemical weapons destruction, with the requirement that destruction begin by December 1992.

The United States and Russia have not implemented key aspects of the agreements. The two countries are just beginning the process of verifying each other's declared chemical weapon stockpiles and facilities in accordance with the 1989 agreement, as amended. The agreement, therefore, was not fully implemented prior to the signing of the Chemical Weapons Convention as originally planned. In addition, the two countries have not finalized or ratified the 1990 destruction agreement. Russia has not begun to destroy its weapons, but the United States has started to do so in accordance with a congressional directive.

Disputes over the number of verification inspections to be conducted, verification procedures, and procedures for converting chemical weapon production facilities to civilian use have delayed Russia's implementation of the agreements. Underlying the implementation problems is Russia's lack of technical and financial resources to destroy its weapons in a timely and safe manner. Russia has much work to do before it can carry out its destruction program.

In January 1994, however, the two countries began to make progress in a number of areas. A U.S. contractor, funded by the United States, will assist in developing a comprehensive plan that will lay the groundwork for Russia's destruction program. U.S. officials said they will use this plan in making decisions on long-range assistance to Russia. The United States will also fund an analytical chemical agent destruction testing laboratory.

The United States and Germany have been the only two countries to provide assistance to the Russian chemical weapon destruction program. The United States has pledged \$55 million and Germany \$2.9 million. Russia, which has stated that it will need \$1 billion in foreign assistance to destroy its chemical weapons, is currently seeking other donors.

Impediments to the Chemical Weapons Convention

The Chemical Weapons Convention is facing several obstacles that could hinder its goal of eliminating the production, stockpiling and use of chemical weapons. As of December 1993, 154 (80 percent) of the 192 countries had signed the convention. However, several countries suspected of having or developing chemical weapons have not signed it. These countries include Egypt, Libya, Iraq, Syria, North Korea, and

Taiwan. Taiwan is not recognized by the United Nations and therefore is ineligible to sign the convention.

In addition, the prospects for early ratification of the convention are not encouraging. Sixty-five countries must ratify the convention and submit their instruments of ratification before it can enter into force. The United States has promoted early ratification so that the treaty can enter into force in January 1995. The Preparatory Commission has been operating under the assumption that this target date will be met. However, only four signatory countries have submitted instruments of ratification, and the convention is not likely to meet its January 1995 entry into force date.

Many countries are looking to the United States and Russia to ratify the convention before doing so themselves. The U.S. Senate is expected to hold ratification hearings during the spring of 1994. Russia's prospects for early ratification are uncertain because of the country's changing political situation. In the meantime, the U.S. government is concerned that Russia is now developing new binary chemical weapons. When Russia ratifies the Chemical Weapons Convention, and it enters into force, Russia cannot develop chemical weapons without being in violation of the convention.

Further, about half the signatory countries have not paid their assessed shares of expenses to the Preparatory Commission or participated in the commission's plenary sessions. Despite this lack of support, the commission has established an organizational framework, recruited staff, and begun to draft regulations and procedures.

U.S. Costs Associated With the Chemical Weapons Treaties Could Be Reduced

During the last 5 years, U.S. agencies have incurred approximately \$166 million in expenses associated with the bilateral agreements with Russia and the Chemical Weapons Convention. The agencies plan to spend another \$717 million during the next 6 years. Expenses include (1) funds for research and development of verification tools that the Organization for the Prohibition of Chemical Weapons will need to conduct effective on-site inspections, (2) the cost of compliance activities related to preparing for and hosting routine and challenge inspections and for continuous monitoring of U.S. destruction sites by teams of Russian inspectors, (3) the cost of verification activities related to preparing for and implementing inspections and continuous monitoring in Russia, (4) the U.S. share of Preparatory Commission and Organization for the Prohibition of Chemical Weapons costs, and the costs associated with

establishing and maintaining a U.S. National Authority, and (5) grant assistance to Russia.

The U.S. government is missing potential opportunities for cost savings in three areas. First, the United States plans to spend \$85 million through fiscal year 1999 on continued research and development efforts to help the Organization for the Prohibition of Chemical Weapons refine and improve its verification regime in such areas as inspector training, detection equipment, and on-site sampling and analysis techniques. The Preparatory Commission has developed guidelines on cost sharing between the Secretariat and member states in the implementation of the proposed general training program for inspectors. However, no cost-sharing arrangements have been developed for the research and development expenditures planned by the United States.

Second, the Arms Control and Disarmament Agency was appropriated \$2.1 million more than needed to support the Preparatory Commission's operations, because of a substantial reduction in the commission's budget. This money is available for rescission. Further, up to an additional \$2.9 million would be available for rescission should the convention not enter into force by January 1995.

Third, the Army and Navy are using expensive computer technology to develop and transmit site diagrams of installations to U.S. personnel responsible for meeting inspection teams at a site adjacent to Washington Dulles airport. The diagrams will be used in the event of an international challenge inspection (an unscheduled visit to a suspected chemical weapon development, production, or storage site). While the Army and Navy's approach is workable, it appears to be more technologically sophisticated than necessary to meet the requirements. The Air Force, in contrast, plans to provide site diagrams at a very low cost by having installations simply fax hard copies of them as needed for the challenge inspection. The Army and Navy combined could save approximately \$5.6 million in future development and maintenance costs over the next 6 years by adopting the less costly Air Force system.

Matters for Congressional Consideration

Congress may wish to consider rescinding that portion of fiscal year 1994 funds appropriated to the Arms Control and Disarmament Agency to pay for U.S. support to the Preparatory Commission that is clearly in excess of the funding required.

Recommendations

GAO makes several recommendations aimed at reducing the costs to the United States of implementing the chemical weapons treaties.

Agency Comments and GAO Evaluation

As requested, GAO did not obtain written agency comments. However, GAO discussed the results of its work with program officials from the Departments of State, Defense, and Energy, and the Arms Control and Disarmament Agency. They generally agreed with the report presentation, but did not accept GAO's recommendations on ways to reduce costs. GAO believes, however, that savings are achievable without degrading the implementation of the verification regime.

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Abbreviations

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| ACDA | Arms Control and Disarmament Agency |
| GAO | General Accounting Office |
| OPCW | Organization for the Prohibition of Chemical Weapons |

Introduction

Chemical weapons are instruments of mass destruction that can kill and maim large numbers of people. Their use is prohibited under an international accord which has been in effect for most of this century. The accord, however, has done very little to stop the proliferation of chemical weapons. In the last 10 years the number of countries having or suspected of developing chemical weapons has increased almost fivefold.

Chemical Agents and Munitions

The two most common chemical agents in chemical weapons are nerve agents and mustard agents. Nerve agents can disrupt the nervous system and lead to loss of muscular control and death. Mustard agents blister the skin and can be lethal in large amounts. The agents can be delivered in a variety of munitions, including bombs, artillery rounds, rockets, grenades, missiles, and aerial sprays.

The 1925 Geneva Protocol

More than 140 countries, including the United States, have signed the 1925 Protocol for the Prohibition of the Use in War of Asphyxiating Poisonous, or Other, Gases and Bacterial Methods of Warfare, known as the Geneva Protocol. The protocol, which entered into force in 1928, bans the use of chemical weapons.¹ However, it does not ban the development, production, and stockpiling of such weapons, and they have proliferated to many countries. Whereas a decade ago 5 countries were thought to have chemical weapons, today at least 24 are suspected of either having or developing them.

Chemical Weapon Stockpiles

There is no accurate accounting of the world's stockpile of chemical weapons. Only the United States, Iraq, and Russia have made stockpile declarations. The United States has approximately 31,000 agent tons of chemical weapons stored in nine locations. Destruction of the weapons began in July 1990 at Johnston Atoll in the Pacific. Under current U.S. plans, destruction facilities will eventually operate at all the storage locations.

In 1991, Iraq stated to the United Nations that it had 46,000 pieces of filled chemical munitions, 79,000 unfilled pieces, and 600 tons of bulk chemical

¹The United States ratified the treaty in 1975 with the reservation that preserves the right of the United States to respond in kind to a chemical weapons attack. Several other countries attached a similar reservation. The United States will retain a chemical weapons retaliatory policy until the Chemical Weapons Convention enters into force, at which time it plans to forswear the use of chemical weapons for any reason.

agents. These weapons are being destroyed under the supervision of the U.N. Special Commission for Iraq.

Russia stated in December 1989,² and again in October 1993, that it had 40,000 agent metric tons, stored in seven locations. None of the weapons were reported to have been destroyed (see ch. 2). In 1986, Russia built a demonstration destruction facility in Chapayevsk. It never opened, however, because of local safety concerns.

Agreements Banning and Destroying Chemical Weapons

The United States and Russia have entered into two interrelated agreements aimed at destroying their chemical weapon stockpiles. The first agreement was signed in September 1989 and the second in June 1990. The 1990 agreement requires approval by the legislative bodies of both countries.

A key objective of the bilateral agreements was to support and facilitate the ongoing negotiations over the international Chemical Weapons Convention. Multilateral negotiations on the convention began in 1968 with the goal of developing a global consensus for banning the production and use of chemical weapons. In September 1992, the 39-member Conference on Disarmament reached agreement on the convention. The United Nations General Assembly approved it in November 1992. The convention was opened for signature on January 13, 1993, and has been signed by most countries in the world and now awaits ratification (see ch. 3).

The convention, if ratified, would restrict members from developing, producing, acquiring, stockpiling, retaining, transferring, or using chemical weapons; regulate the export of items used in the production of such weapons; require the destruction of chemical weapon stocks and facilities within 10 years (15 years in extraordinary cases); and provide for intrusive inspections, including challenge inspections to ensure compliance.

Monitoring the implementation of the convention will be the Organization for the Prohibition of Chemical Weapons (OPCW). A predecessor organization—the Preparatory Commission—was approved in conjunction with the signing of the convention. The main functions of the Hague-based commission are to facilitate the entry into force of the convention and to

²The declaration was made by the former Soviet Union. In 1991, the Union was dissolved and Russia declared its willingness to accept and implement fully all the arms control obligations of the former Soviet Union.

establish the OPCW. Funding for the commission is provided through assessed contributions from signatory countries.

Legislated Assistance for Russia

In 1991, Congress passed the Soviet Nuclear Threat Reduction Act to reduce the Soviet military threat by cooperating in the destruction of Soviet nuclear and chemical weapons. The program is to be funded by the transfer of up to \$400 million in Defense appropriations in each of fiscal years 1992 and 1993. In fiscal year 1994, an additional \$400 million was appropriated for these and other assistance programs to Russia. The Department of Defense is planning to use \$55 million of these funds to help Russia destroy its chemical weapons.

Roles and Responsibilities of U.S. Agencies

The National Security Council provides overall U.S. policy direction for the chemical weapon agreements and will serve as the national authority for ensuring that declarations are made and inspections are carried out in a timely manner. The Arms Control and Disarmament Agency (ACDA) will serve as the Office of the U.S. National Authority and will be responsible for compiling required declarations and reports, acting as the U.S. liaison with the OPCW, and providing administrative support for U.S. implementing procedures. Coordinating implementation is an interagency working group on chemical matters, with representatives from the Departments of State, Defense, Commerce, Justice and Energy; ACDA; the Joint Staff; and the intelligence community.

Support Program for Verification Inspections

The United States has initiated a program to prepare for the verification inspections to be conducted under the bilateral agreements with Russia and the convention. Participating in the program are various components of the Department of Defense, including the military services, the Joint Staff, the Defense Nuclear Agency, and the On-Site Inspection Agency; the Departments of Energy, Commerce, Justice and State; ACDA; and the intelligence community.

Objectives, Scope, and Methodology

We undertook this review to assist the Senate Committee on Foreign Relations in its deliberations over ratification of the Chemical Weapons Convention. Our overall objectives were to examine (1) the progress made in implementing the bilateral agreements with Russia, (2) the status of the Chemical Weapons Convention, and (3) the costs incurred by the United States in preparing for and implementing the agreements.

We obtained documents from and interviewed officials at ACDA and the Departments of State, Energy, and Defense. At ACDA we discussed U.S. policy on chemical weapons, problems encountered in implementing the bilateral agreements, and U.S. support for the Preparatory Commission. We obtained the views of State Department officials on the progress of the bilateral agreements and on Germany's assistance program to Russia relative to chemical weapons destruction. At Energy we obtained information on research efforts being conducted to support verification inspections.

At the Department of Defense we met with officials from the Office of the Secretary of Defense; the Army's Chemical Materiel Destruction Agency, Chemical Research Development and Engineering Center, and Executive Agent for Chemical Treaty Compliance; the Defense Nuclear Agency; the Navy's Theater Nuclear Warfare Program; the Air Force's Office of National Security Negotiations; the On-Site Inspection Agency; and the Defense Intelligence Agency. Among the topics of discussion were U.S. policies and implementing procedures for assistance provided under the Soviet Nuclear Threat Reduction Act,³ research efforts conducted in support of verification inspections, data on Russia's chemical weapon stocks, and the verifiability of the convention.

We also met with officials from the Chemical Manufacturers Association to obtain their estimates of the cost the chemical industry will incur in complying with the Chemical Weapons Convention. A senior associate from the Henry Stimson Center provided us background information on the Chemical Weapons Convention and discussed the progress being made by the Preparatory Commission.

We visited the Hague to interview officials at the Preparatory Commission and staff at the U.S. delegation office. In Bonn, we met with an official from the German Foreign Affairs Ministry to discuss that country's assistance to Russia. In Moscow, we interviewed the Chairman of Russia's Presidential Committee on Conventional Problems of Chemical and Biological Weapons and the Arms Control Director at the Ministry of Foreign Affairs. These discussions centered on Russian plans to implement the bilateral agreements and the convention, their perspective on using the assistance offered by the United States, and the cost of destroying Russia's chemical weapons. We also met with U.S. Embassy officials and representatives of the U.S. Chemical Weapons Destruction Support Office.

³Currently called the Cooperative Threat Reduction Act.

Chapter 1
Introduction

We performed our review between April 1993 and January 1994 in accordance with generally accepted government auditing standards. As requested, we did not obtain written agency comments. However, we discussed the results of our work with program officials from the Departments of State, Defense, and Energy, and ACDA. Their comments and our evaluation are discussed in the report.

Implementation of U.S.-Russian Agreements Has Progressed Slowly

The United States and Russia have not implemented key aspects of their bilateral agreements on chemical weapon destruction. The two countries are just beginning the process of verifying each other's declared chemical weapon stocks and facilities in accordance with the 1989 agreement, as amended. Therefore, this agreement was not fully implemented prior to the signing of the Chemical Weapons Convention as originally planned. In addition, the United States and Russia have not finalized their 1990 agreement, which laid out a schedule for chemical weapon destruction, and Russia has not begun to destroy its chemical weapons.

Disputes over the number of verification inspections to be conducted, verification procedures, and procedures for converting chemical weapon production facilities to civilian use have delayed implementation of the agreements. Underlying the implementation problems is Russia's lack of technical and financial resources to destroy its weapons in a timely and safe manner. Russia has much work to do before it can carry out its destruction program. In January 1994, however, the two countries began to make progress in reaching agreement on a number of areas.

Bilateral Agreements on Chemical Weapons Destruction

The 1989 agreement between the United States and Russia consists of two phases. In the first phase, the countries are to exchange general data on their chemical weapons and make reciprocal visits to storage, production, and destruction facilities. In the second phase, the countries are to exchange detailed data on their chemical weapon stocks and verify this information through reciprocal on-site inspections. During this phase, each country is to provide the other with general plans for dismantling chemical weapon production facilities.

The 1990 agreement calls for the destruction of most chemical weapons and for verification inspections. It states that each country is to begin destroying chemical weapons no later than December 1992 and complete the destruction of most weapons within 10 years.

At the time the agreements were formulated, one key objective was to facilitate negotiations on an international treaty—the Chemical Weapons Convention—to ban the production and use of chemical weapons.

Status of Implementation

The first phase of the 1989 agreement was completed in early 1991. During this phase, the United States and Russia conducted three reciprocal visits

to chemical weapon facilities and exchanged overall chemical weapons data.

The second phase of the 1989 agreement was delayed because of disputes between the two countries. They initially agreed to an implementation plan in March 1993, but the agreement broke down when Russia raised objections to the plan and proposed several changes, mainly concerning the number of inspections to be conducted. Negotiations were reopened in November 1993, and a final implementation plan was signed on January 14, 1994.

Under this implementation plan, the countries are to begin exchanging detailed chemical weapon data 90 days after the signing date. The data exchange is to be completed 30 days later (or 45 days if additional time is necessary to resolve ambiguities). Five verification inspections by each country are scheduled. The first inspection—a trial challenge inspection—is to begin not earlier than 180 days after the signing date. The remaining four inspections are to begin not earlier than 225 days after the signing date and are to conclude 300 days after the signing date, which will be in November 1994.¹ Until then, the United States will not have completed its verification of Russia's declared chemical weapon stocks through on-site inspections.

The 1990 destruction agreement has not been finalized and ratified. The principal issue holding up completion of the agreement concerns the conversion of former chemical weapon production facilities. In March 1993, the negotiators for the two countries reached an accord on verification procedures and on procedures for converting these facilities to civilian use so that they could no longer be used to produce chemical weapons. The Russian government subsequently rejected the agreement, stating that it wanted more latitude in the conversion process. Negotiations are continuing. A final agreement will include new milestone dates for starting and completing the destruction process.

Russia missed the agreement's December 1992 original target date for starting its destruction program. Currently, it has no comprehensive plan defining when and how the weapons will be destroyed.

¹The four inspections include two routine inspections and two challenge inspections. A routine inspection is a systematic examination of potential chemical weapon storage or production facilities declared by the host country. A challenge inspection is a nonscheduled visit to a suspected chemical weapon development, production, or storage site. The purpose of the trial inspection is to develop procedures for conducting the subsequent challenge inspections.

Russia Lacks the Technical and Financial Resources to Carry Out Its Destruction Program

According to U.S. and Russian officials, Russia cannot safely destroy its chemical weapons using its current facilities and may not have appropriate technology. A massive infusion of money and technology will be needed to upgrade Russia's capabilities. The two countries, in January 1994, agreed that a U.S. contractor would be hired to develop a comprehensive plan for Russia's destruction program.²

Estimated Costs for the Russian Destruction Program

Russia estimates that its chemical weapon destruction program will cost between \$5 billion and \$6 billion. The U.S. program to destroy its chemical weapons is currently estimated at \$8.6 billion. Although Russia has more chemical weapons, the weapons reportedly do not contain explosives charges. Weapons without explosives charges should be less costly to destroy. Russian officials have stated that upwards of \$1 billion in foreign assistance will be required for the destruction program.

U.S. Assistance to the Russian Destruction Program

The United States and Russia signed an agreement in July 1992 whereby the United States would provide up to \$25 million in chemical weapons destruction assistance to Russia. Most of the funds are to be used to develop a comprehensive destruction plan. An additional \$30 million was offered to assist Russia in developing an analytical chemical weapons destruction laboratory in Moscow.

In addition, a Department of Defense official told a congressional committee in March 1994 that to spur Russian chemical weapons destruction, the United States is prepared to provide \$300 million or more to help build a pilot destruction plant. The plant would take 8 years or longer to complete. This U.S. assistance would be conditioned on Russia's agreeing to destroy its most modern chemical weapons bombs at the plant.

As of the end of 1993, only \$2.7 million of the \$55 million in reserved funds had been obligated or spent. These funds were used for the establishment of a field office in Moscow, translation services, development of an English-Russian technical language dictionary related to chemical weapons terminology, travel, technical exchanges, training, and Army Corps of Engineers support.

²While the United States has started to destroy its chemical weapons, it has experienced technical difficulties that have resulted in slippage of its destruction schedule. See *Chemical Weapons Destruction: Issues Affecting Program Cost, Schedule, and Performance* (GAO/NSIAD-93-50, Jan. 21, 1993) and *Chemical Weapons: Stockpile Destruction Cost Growth and Schedule Slippages Are Likely to Continue* (GAO/NSIAD-92-18, Nov. 20, 1991).

The United States insisted that before it obligates most of the funds, a specific plan be established for exchanging detailed data on chemical weapon stocks. The detailed technical data is considered necessary for developing a comprehensive plan and estimating the cost for the destruction program.

Further, the U.S. assistance programs to Russia are contingent on Russian treaty compliance. To receive the assistance under the 1991 act, Russia must be in compliance with all relevant arms control agreements. When the Chemical Weapons Convention enters into force, and if the 1990 bilateral destruction agreement is approved, Russia can no longer develop or produce chemical weapons without violating the treaties. Currently, there is concern within the U.S. government that Russia is developing binary chemical weapons. ACDA, for example, stated that the United States has serious concerns that a viable Russian chemical weapons research, development, testing and evaluation program is continuing and that Russia has not responded satisfactorily to these U.S. concerns.

Recent Progress Has Been Made in a Number of Areas

In January 1994, Russia and the United States agreed to a joint 1994 work plan that calls for hiring a U.S. contractor to develop a comprehensive plan for the destruction program. Among other aspects the plan is expected to form the basis for determining when and how the destruction program can proceed and the types of financial and technical assistance Russia will require. U.S. officials said they will use the plan in making decisions on long-range U.S. assistance to the Russian destruction program.

Upon signing the work plan, Russia will also receive the financing for the chemical agent testing laboratory. The laboratory agreement is expected to be signed in mid-March 1994. This laboratory is expected to (1) develop analytical methods and quality control measures, (2) conduct environmental baseline studies, and (3) train scientists and technicians to help protect the environment while destroying chemical weapons. Russia has requested that the laboratory be located at the Vernodsky Institute of Geochemical Analytical Chemistry in Moscow and that the funds be used to purchase equipment and to refurbish facilities.

The work plan also provides for the development of a program management system which will be used to develop cost estimates, a comprehensive public outreach and education program for the Russian people, the establishment of design criteria for destruction facilities, and

the continuation of some programs previously agreed to, such as developing a technical language dictionary.

Other Foreign Assistance

Besides the United States, only one other donor—Germany—has committed funds to Russia's chemical weapon destruction program. Russia and Germany signed an agreement in December 1992 whereby Germany made a commitment to help Russia destroy some of its nuclear and chemical weapons. In accordance with the agreement, a joint Russian-German commission was established in June 1993 with the responsibility of monitoring the implementation of the destruction program. In fiscal year 1993, Germany provided \$2.9 million to help finance the destruction of mustard and lewisite agents and to explore the feasibility of extracting arsenic from the lewisite for commercial purposes. The work is being performed by two German companies. A German official said if the initial German efforts are successful and the Russian political situation stabilizes, then German assistance is expected to increase in future years.

Russia is also seeking assistance from other sources. The Chairman of Russia's Presidential Committee on Conventional Problems of Chemical and Biological Weapons said he has requested assistance from Sweden, France, Switzerland, and the North Atlantic Treaty Organization. He hopes assistance also will be provided by the International Monetary Fund, the European Bank for Reconstruction and Development, and the European Community. In addition, the Chairman has contacted several private U.S. firms with the hope that the U.S. government will finance their assistance efforts. To date, no additional assistance has been provided.

Assistance Efforts Are Not Coordinated

German and U.S. officials have informally discussed their respective programs, but the two programs are essentially independent. Indeed, there appear to be no efforts to coordinate assistance from current and potential donors. Russian officials have stated that they see no need to create an organization to coordinate their assistance efforts.

Conclusions

Russia has not started the destruction of its chemical weapons and currently has no comprehensive plan that defines when and how the weapons will be destroyed. The 1989 agreement has not been fully implemented as originally planned, and the 1990 destruction agreement has not been finalized and ratified. Because the two bilateral agreements

have not been implemented as planned, the Chemical Weapons Convention did not receive the full benefits as originally anticipated when the agreements were entered into.

The costs to destroy Russian chemical weapons is another deterrent to timely program implementation. The recent agreement between the two countries, whereby a U.S. contractor will assist in developing a comprehensive chemical weapons destruction plan for Russia, should form the basis for determining when and how the destruction program can proceed and the types of financial and technical assistance Russia will require.

If the bilateral destruction agreement or the Chemical Weapons Convention (with Russian ratification) enters into force, and the United States still believes Russia is developing binary chemical weapons, then U.S. assistance to Russia's chemical weapons destruction program could not be legally continued. Since neither the bilateral destruction agreement nor the convention has entered into force, Russia is not in violation of its existing obligations.

Impediments to the Chemical Weapons Convention

The Chemical Weapons Convention is facing several obstacles that could hinder its goal of eliminating the production, stockpiling, and use of chemical weapons. Several countries suspected of having or developing chemical weapons have not signed the convention. In addition, the prospects for early ratification of the convention are not encouraging. Only four signatory countries have submitted instruments of ratification, and the convention is unlikely to meet its entry-into-force target date of January 1995. Further, about half the signatory countries have not paid their assessed shares of expenses to the Preparatory Commission or participated in the commission's plenary sessions.

Convention Membership

One of the Conference on Disarmament's objectives in drafting the convention was to obtain universal membership. As of December 1993, 154 (80 percent) of the 192 countries of the world had signed the convention. Among the non-signatory countries were Egypt, Libya, Iraq, Syria, North Korea, and Taiwan.¹ All these countries are suspected of having or developing chemical weapons.

As an inducement to countries to sign and ratify the convention, the convention will prohibit transfers of many chemicals with dual military and civilian uses to nonmembers. Transfers of other dual-use chemicals will be permitted only under restrictive conditions. These restrictions should help ensure that nonmember countries do not receive controlled chemicals that can be used to make chemical weapons. The restrictions, however, will also affect non-signatory countries' legitimate industrial needs. In addition, the members of the Australia Group² have adopted export controls on certain chemicals and equipment to impede the production of chemical weapons.

Unfavorable Prospects for Early Ratification

The convention will enter into force 180 days after 65 countries have ratified it, although it cannot go into effect before January 13, 1995. The presidents of the United States and Russia, in a January 1994 joint statement, declared their intention to promote treaty ratification as rapidly as possible and entry into force of the convention not later than 1995. The

¹Taiwan is not recognized by the United Nations and therefore is ineligible to sign the convention.

²The 25-member Australia Group was established in 1984 to discourage and impede the proliferation of chemical weapons, mainly through the harmonization of export controls on chemicals and, more recently, on equipment that can be used to make chemical weapons. The group also controls biological organisms, toxins, and equipment that can be used to make biological weapons.

Preparatory Commission has operated under the assumption that the convention will go into effect in January 1995.

Early ratification, however, appears improbable. As of December 1993, only Sweden, Fiji, Mauritius, and the Seychelles had deposited instruments of ratification with the United Nations. Saudi Arabia, Norway, and Oman have ratified the convention but have not deposited their instruments of ratification.

We were told that many countries were looking to the United States and Russia to ratify the convention before doing so themselves. In the United States, the convention was submitted to the Senate for ratification in November 1993. The Senate is expected to hold ratification hearings during the spring of 1994. Russia's prospects for early ratification are uncertain because of the changing political situation. In addition, Russian officials have stated that receiving \$1 billion in foreign assistance and finalizing the 1990 bilateral destruction agreement are essential to their ratification of the convention. As discussed in chapter 2, Russia has been promised only about \$58 million so far, and the United States and Russia have not finalized or ratified the bilateral destruction agreement.

If 65 countries ratify the convention and it enters into force without the United States, Russia, or both, the ratifying countries would be responsible for all of the OPCW's operating costs. Currently, the United States and Russia together pay about 32 percent of the Preparatory Commission's costs. In addition, in accordance with the convention, U.S. and Russian staff on the Preparatory Commission, including several in key positions, could not become OPCW employees. A loss of either funding or key personnel could slow progress in fully implementing the convention.

Status of the Preparatory Commission

Since its inception in February 1993, the Preparatory Commission has established an organizational framework, developed a budget, recruited staff, and begun to draft regulations and procedures for the OPCW. However, it has lacked support from many signatory countries.

Organization and Budget

The Preparatory Commission consists of a chairman (rotated every 6 months), an executive secretary who heads the Provisional Technical Secretariat (the organization's staff), and two working groups. The Secretariat comprises five divisions: verification, external relations, technical cooperation and assistance, legal, and administration. The two working groups—one for budget and administration and the other for

verification, technical cooperation, and assistance—are assisted by about 15 groups of experts provided by about 20 countries. In 1993, the commission met in plenary sessions five times.

The commission's budget for 1993 was \$8.8 million. It has budgeted \$29.7 million for 1994 based on the assumptions that (1) the Chemical Weapons Convention will enter into force in January 1995, (2) Russia and the United States will implement their 1990 agreement to destroy their chemical weapons in 1994, and (3) Russia and the United States will ratify the convention in 1994.

Staffing

The Provisional Technical Secretariat had 66 staff members in 1993. This figure includes nine staff, including two from the United States, who were loaned to the Secretariat for several months, but it does not include the experts assisting the working groups, who were provided at no cost to the commission by member countries. The staffing is expected to increase to 225 in 1994.

A list of 34 key personnel as of mid-December 1993 indicates that 25 countries were represented. Four Americans held key positions, including one U.S. citizen who was serving as director of the Secretariat's administration division. Three citizens each from Russia and the United Kingdom held key positions.

Regulations and Procedures

In laying the groundwork for the OPCW, the Preparatory Commission approved financial regulations and an external auditor. Work in such areas as the development of staff rules and various verification procedures is continuing.

Lack of Support From Many Signatory Countries

The Preparatory Commission has made progress despite receiving little support from many signatory countries. As of December 1993, 71 (46 percent) of the 154 signatory countries had not paid any of their 1993 assessments.³ Another 12 members (8 percent) made only partial payments. In addition, attendance at the Preparatory Commission's five plenary sessions in 1993 ranged from a high of 66 percent at the first session to 52 percent at the last session. At these sessions, all important decisions affecting the commission are discussed for approval or rejection.

³Two countries—Lithuania and Vietnam—formally stated that they would not pay their assessments.

Conclusions

Although 80 percent of the world's countries have signed the Chemical Weapons Convention, only a few have ratified it. Moreover, a number of key countries suspected of having or developing chemical weapons have not signed.

The low attendance of members at Preparatory Commission meetings and the large number of countries that have not paid their Preparatory Commission assessment provide some evidence that interest in directly supporting Chemical Weapons Convention objectives is not high. Given these factors, meeting the January 1995 target date for entry into force will be difficult. U.S. and Russian ratification of the Chemical Weapons Convention appears critical to obtaining ratification support from other members.

U.S. Treaty Implementation Costs Could Be Reduced

Over an 11 year period, the United States has spent or plans to spend almost \$900 million to support the bilateral chemical weapons agreements with Russia and the Chemical Weapons Convention.¹ Our review indicated that some of these costs could be reduced since the U.S. government is missing potential opportunities for cost savings in three areas. First, the United States has not asked the Preparatory Commission to help pay for future research and development expenditures designed to support the OPCW's verification regime. Second, because the Preparatory Commission's budget was substantially reduced in 1994, ACDA's appropriation for the U.S. assessment to the Preparatory Commission is excessive. Third, the Army and Navy have adopted a costly computerized site diagram program which does not appear to be needed. (See appendix I for a detailed description of incurred and planned implementation costs.)

Planned Research and Development Costs Could Be Reduced

Between fiscal years 1994 and 1999, the Defense Nuclear Agency, the Department of Energy,² and ACDA plan to spend a total of almost \$85 million on follow-on research and development projects. These expenditures are in addition to the \$98.7 million already spent by these agencies on research and development efforts from fiscal years 1989 through 1993 to support the Preparatory Commission's verification regime.³ Until recently, there was no mechanism in place to provide for sharing the burden of these expenses.

The comprehensive program of research and development conducted by the United States far exceeds the efforts of any other member state. The United States took a leadership role in developing a verification system since its resources and expertise in the chemical weapons field significantly exceeds that of any other member state, with the possible exception of Russia. Several other industrialized member states, however, have provided support through national trial inspections and selected research in such areas as non-destructive evaluation techniques and inspector training.

¹It is currently estimated that another \$8.6 billion will be spent to destroy the U.S. chemical weapons stockpile. Additional costs are expected to be incurred in (1) examining alternative technologies for destroying the U.S. stockpile and (2) destroying non-stockpile items such as former U.S. production facilities and buried munitions.

²The Department of Energy's program is scheduled to be closed out by the end of fiscal year 1994 due to a congressionally mandated cut in funding from \$4.2 million to \$1.4 million.

³Program officials pointed out that while U.S. research and development efforts are primarily geared towards supporting the Chemical Weapons Convention, these efforts also have application to the verification activities to be conducted under the bilateral destruction agreement with Russia.

The \$85 million in planned U.S. expenditures will be spent on a wide range of projects, including inspector training; assorted studies and evaluations; and research and development projects aimed at refining and improving the OPCW's inspector training, verification equipment, and sampling techniques. According to a U.S. Army official, these projects should increase inspection effectiveness and enhance the protection of sensitive or classified non-chemical weapons information. Examples of planned research and development are efforts to produce a real time safety monitor for inspectors, a portable poisonous gas detector, and an improved portable lab system.

The Preparatory Commission does not intend to include a line item in its budget to cover the costs of follow-on research and development efforts. The Preparatory Commission has, however, established a small training budget in its 1994 budget which will allow for the limited renumeration of the costs incurred by member states that elect to provide OPCW inspector training.

In the past, when the United States conducted research activities to assist the development of a verification regime for the Chemical Weapons Convention, there was no organization in place that could concur with or reimburse U.S. research efforts. This situation changed with the establishment of the Preparatory Commission in February 1993.

If an agreement could be reached on the type and extent of research and development activities needed to support the OPCW's future operations, the Preparatory Commission (and subsequently the OPCW) could include a line item in its annual budget for such activities. If it was agreed that the entire U.S. budget of \$85 million was appropriate, the United States over a 6-year period could potentially save approximately \$64 million in planned research and development activities since the United States is assessed 25 percent of the Chemical Weapons Convention's costs.

Excess Funds Appropriated for the U.S. Contribution to the Preparatory Commission

In fiscal year 1993, the United States contributed \$2.2 million to the Preparatory Commission, or approximately 25 percent of the commission's first-year operating budget. Congress appropriated \$9.5 million for the U.S. assessment in fiscal year 1994; however, due to a significant reduction in the Preparatory Commission's 1994 budget, the maximum expected U.S. assessment will be only \$7.4 million. As a result, \$2.1 million in ACDA funds will be available for recision.

Furthermore, if the convention fails to enter into force by January 1995 as planned, the Preparatory Commission will not need all the funds it has budgeted and the U.S. assessment would be reduced by as much as another \$2.9 million. Thus, excess funds could total as much as \$5 million.

ACDA officials said they plan, with congressional approval, to reserve the amount appropriated in excess of the expected \$7.4 million assessment for a number of contingencies. These contingencies include (1) providing an advance to the commission to meet unanticipated expenses or shortfalls due to signatories not meeting their assessments and (2) funding start-up costs for the U.S. Office of National Authority. The officials made no comment on plans for using the additional excess funds should the convention not enter into force by January 1995.

Army and Navy Adopt a Costly Site Diagram Program

To prepare for the international regime's challenge inspections of chemical weapons production, storage, and destruction facilities, the U.S. Army, Navy, and Air Force have each developed a treaty compliance program. Among their responsibilities, the services will provide site diagrams of their installations in the event of a challenge inspection. The Army and Navy have computerized their site diagrams in a central location. The Air Force, in contrast, will have installations transmit hard copies of the site diagrams by facsimile machine. Although the Air Force's approach is less sophisticated, it meets the requirements at little cost to the government since each installation is already required to maintain a site diagram for other purposes.

Site Diagrams Used in Negotiations With OPCW Teams

For a challenge inspection, U.S. officials will meet the OPCW inspection team at the U.S. port of entry—Washington Dulles International Airport—and provide a work area for the inspectors. Within 24 hours of the team's arrival, the United States is obliged to either reach agreement on an inspection perimeter or propose an alternative perimeter which establishes the sections of the installation that inspectors will be granted access to. Accurate site diagrams will be essential to help U.S. officials conclude these negotiations in an effective and timely manner. The site diagrams will also be used to negotiate access to sensitive areas once the inspectors arrive at the installation.

Two Approaches Used to Develop and Transmit Site Diagrams

All three services have developed methods for providing timely access to their site diagrams. The Army and the Navy have established a computerized site diagram program at the Navy's installation at Indian Head, Maryland,⁴ which is inputting data from approximately 800 different Navy and Army facilities. When an installation is to be inspected, site diagram data will be downloaded to a lap top computer and a hard copy will be printed out for use by U.S. officials meeting the inspection team at Dulles Airport and by the support team sent to the challenged site.

The cost of this approach, including system development, procurement, and data entry costs, amounted to \$2.3 million through fiscal year 1993. Data entry and system maintenance costs are estimated to be about \$6.9 million from fiscal years 1994 through 1999. Approximately \$1.3 million of the \$6.9 million will have been spent by the end of March 1994, thus leaving a balance of \$5.6 million.

The Air Force is not computerizing or centralizing its site diagrams. Instead, when an installation is the subject of a challenge inspection, installation officials will cut a copy of an up-to-date site diagram into strips and fax it to U.S. officials who are to meet the visiting inspectors at Dulles Airport. The strips will then be reassembled for use in the negotiations. While less sophisticated than the Army and Navy's approach, the Air Force's approach appears to be sufficient. The Air Force official responsible for the program told us he tested the concept and it proved to be workable.

Army and Navy officials provided various reasons to support their use of computerized site diagrams. For example, Army officials said (1) about five percent of Army site diagrams are on blue line paper which cannot be readily duplicated, (2) a limited number of sites have diagrams which number in the tens of pages and could prove cumbersome to fax, and (3) inspection perimeter lines can be drawn with greater accuracy on computerized diagrams.

Navy officials said (1) computerization allows for uniform and more accurate site diagrams, (2) the computers can store historical data on chemical weapon activities that may have existed at the installation, and (3) centralization of records creates a needed focus for the program and will allow a Washington-led team to provide competent on-site guidance during an inspection.

⁴Located approximately 30 miles from Washington.

We agree that in limited cases the faxing of site diagrams may not prove feasible. However, Army and Navy officials acknowledged that the hard copies of site diagrams maintained in the Washington area contain essentially the same information as computerized site diagrams and could be used in negotiations with inspection teams.⁵

Conclusions

U.S. plans call for \$85 million more to be spent on research and development efforts designed primarily to refine and improve the convention's verification regime. These unilateral expenditures are voluntary and are aimed mainly at supporting the OPCW, although they also support the bilateral destruction agreement with Russia. A key question to consider now is whether the United States should continue paying for all such efforts without first seeking to obtain support funding from the OPCW. We recognize that member states may not be able to support the entire U.S. research effort. Given that the OPCW is a multilateral organization whose efforts will benefit all members, it appears reasonable to expect that significantly greater cost sharing of OPCW activities should be undertaken by other member countries. By seeking OPCW funding support, the United States would also obtain some evidence as to whether the international organization deems the planned U.S. research to be of substantive value to the verification process.

ACDA has been appropriated \$2.1 million more than is needed for current-year operations to support the Preparatory Commission. Additional appropriations amounting to as much as \$2.9 million may be available for rescission if the Chemical Weapons Convention does not enter into force by January 1995.

With regard to U.S. compliance efforts, the Navy and Army have chosen to pursue a site diagram program which has cost millions of dollars to develop and will require millions of dollars to maintain and keep operational. The Air Force has chosen to use a low-cost option for transmitting site diagrams to Washington. The Army and Navy could save about \$5.6 million over the next 6 years by adopting the Air Force system.

Recommendations

We recommend that the Director, ACDA, and the Secretary of Defense reach an agreement with the Preparatory Commission (and subsequently the OPCW) on how the United States can be reimbursed for some of the

⁵The Army maintains hard copies at the installations, Indian Head, and a contractor facility in Aberdeen, Maryland. The Navy maintains hard copies at the installations, Indian Head, and the Naval Facility Engineering Command in Washington.

costs of U.S. research and development efforts which directly support the chemical weapons verification regime.

We recommend that the Secretary of Defense review the treaty compliance programs of the military services with the view of determining and implementing the most cost-effective system for generating and transmitting site-diagrams in the event of a challenge inspection.

Matters for Congressional Consideration

Congress may wish to consider rescinding that portion of fiscal year 1994 funds appropriated to ACDA to pay for U.S. support to the Preparatory Commission that is clearly in excess of the funding required.

Agency Comments and Our Evaluation

In discussing our recommendation on establishing a shared funding arrangement with the OPCW, a Department of Defense official told us that the United States would not want to rely on any external funding to pay for planned research and development efforts. This official also doubted that the international community would be willing to pay for U.S. research and development costs; however, this theory is untested since the United States has not sought any type of burden sharing arrangement to date.

ACDA officials acknowledged that they have received more money than needed to pay for the U.S. share of the Preparatory Commission's budget, but they want to retain these excess funds for contingencies. Our office has traditionally taken the position that funds not needed for the purposes for which they were provided should be considered for rescission.

With respect to site diagrams, the Defense official raised no substantive drawbacks associated with the Air Force system. However, he did question whether the Air Force method could be implemented on a timely basis. The Air Force, however, has demonstrated that its system can meet challenge inspection time requirements. In those cases where faxing is not practical, hard copies of site diagrams maintained in the Washington area would be available to conclude perimeter negotiations.

Incurred and Planned Expenditures

Most of the \$165.5 million that U.S. agencies spent between fiscal years 1989 and 1993 on activities associated with the bilateral agreements with Russia and the Chemical Weapons Convention went to research and development efforts (60 percent) and treaty compliance and verification activities (35 percent). U.S. agencies plan to spend \$716.7 million between fiscal years 1994 and 1999, with \$462.4 million (or about 65 percent) of that amount going for compliance and verification activities.

Tables I.1 and I.2 list annual expenses in the following five program areas: (1) funds for research and development of verification tools that the OPCW will need to conduct effective on-site inspections, (2) the cost of compliance activities related to preparing for and hosting routine and challenge inspections, and for continuous monitoring of U.S. destruction sites by teams of Russian inspectors, (3) the cost of verification activities related to preparing for and implementing inspections and continuous monitoring in Russia, (4) the U.S. share of Preparatory Commission and OPCW costs, and the costs associated with establishing and maintaining a U.S. National Authority, and (5) grant assistance to Russia.

Table I.2 does not include the projected costs to private industry for complying with the inspection requirements under the convention. The Chemical Manufacturers Association roughly estimates that these costs will total \$120 million from calendar years 1994 through 1999. ACDA, however, estimates that actual costs to private industry over the same 6-year period will total about \$21 million. We did not perform an analysis of these two cost estimates.

**Appendix I
Incurred and Planned Expenditures**

**Table I.1: Incurred Treaty
Implementation Costs, Fiscal Years
1989-93**

| Dollars in millions | | | | | | |
|---|--------------|---------------|---------------|---------------|---------------|----------------|
| Program area | 1989 | 1990 | 1991 | 1992 | 1993 | Total |
| Research and development | | | | | | |
| Defense Nuclear Agency | 0 | \$15.0 | \$22.0 | \$22.5 | \$21.4 | \$80.9 |
| Department of Energy | \$2.0 | 2.0 | 2.7 | 4.7 | 5.8 | 17.2 |
| ACDA | 0 | 0.1 | 0.1 | 0.2 | 0.2 | 0.6 |
| Subtotal | 2.0 | 17.1 | 24.8 | 27.4 | 27.4 | 98.7 |
| Treaty compliance and verification ^a | | | | | | |
| Army | 0 | 0 | 0.5 | 15.3 | 13.0 | 28.8 |
| Navy | 0 | 0 | 0 | 2.8 | 7.5 | 10.3 |
| Air Force | 0 | 0 | 0 | 0 | 0.1 | 0.1 |
| On-Site Inspection Agency | 0 | 0 | 1.0 | 8.8 | 11.1 | 20.9 |
| Subtotal | 0 | 0 | 1.5 | 26.9 | 31.7 | 60.1 |
| Preparatory Commission/OPCW ^b | | | | | | |
| U.S. assessment | 0 | 0 | 0 | 0 | 2.2 | 2.2 |
| U.S. delegation support | 0 | 0 | 0 | 0 | 2.1 | 2.1 |
| Subtotal | 0 | 0 | 0 | 0 | 4.3 | 4.3 |
| Grant aid to Russia | 0 | 0 | 0 | 1.5 | .9 | 2.4 |
| Total | \$2.0 | \$17.1 | \$26.3 | \$55.8 | \$64.3 | \$165.5 |

^aArmy, Navy, and Air Force costs relate only to treaty compliance activities. On-Site Inspection Agency costs cover both compliance and verification activities.

^bFunding for the Preparatory Commission/OPCW comes from ACDA appropriations.

**Appendix I
Incurred and Planned Expenditures**

Table I.2: Projected Treaty Implementation Costs, Fiscal Years 1994-99

Dollars in millions

| Program area | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | Total |
|---|----------------|-------------------|----------------|----------------|----------------|----------------|----------------|
| Research and development | | | | | | | |
| Defense Nuclear Agency | \$19.0 | \$17.6 | \$12.6 | \$9.6 | \$11.0 | \$12.3 | \$82.1 |
| Department of Energy | 1.4 | 0 | 0 | 0 | 0 | 0 | 1.4 |
| ACDA | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 1.2 |
| Subtotal | 20.6 | 17.8 | 12.8 | 9.8 | 11.2 | 12.5 | 84.7 |
| Treaty compliance and verification^a | | | | | | | |
| Army | 29.0 | 39.4 | 41.7 | 33.7 | 29.9 | 28.6 | 202.3 |
| Navy | 7.1 | 4.5 | 4.9 | 5.2 | 4.7 | 4.7 | 31.1 |
| Air Force | 1.4 | 0.5 | 0.1 | 0.1 | 0.1 | 0.1 | 2.3 |
| On-Site Inspection Agency | 18.0 | 25.1 | 31.7 | 44.2 | 50.1 | 57.6 | 226.7 |
| Subtotal | 55.5 | 69.5 | 78.4 | 83.2 | 84.8 | 91.0 | 462.4 |
| Preparatory Commission/OPCW^b | | | | | | | |
| U.S. assessment ^c | 7.4 | 20.0 ^d | 20.0 | 20.0 | 20.0 | 20.0 | 107.4 |
| U.S. delegation support | 0.7 | 0.8 | 0 | 0 | 0 | 0 | 1.5 |
| National Authority costs ^e | 0.1 | 2.0 | 1.5 | 1.5 | 1.5 | 1.5 | 8.1 |
| Subtotal | 8.2 | 22.8 | 21.5 | 21.5 | 21.5 | 21.5 | 117.0 |
| Grant aid to Russia | 52.6 | 0 | 0 | 0 | 0 | 0 | 52.6 |
| Total | \$136.9 | \$110.1 | \$112.7 | \$114.5 | \$117.5 | \$125.0 | \$716.7 |

^aArmy, Navy, and Air Force costs relate only to treaty compliance activities. On-Site Inspection Agency costs cover both compliance and verification activities.

^bFunding for the Preparatory Commission/OPCW comes from ACDA appropriations.

^cFiscal year 1995 through 1999 data is based on a rough estimate of the OPCW's total operating costs provided by the Preparatory Commission.

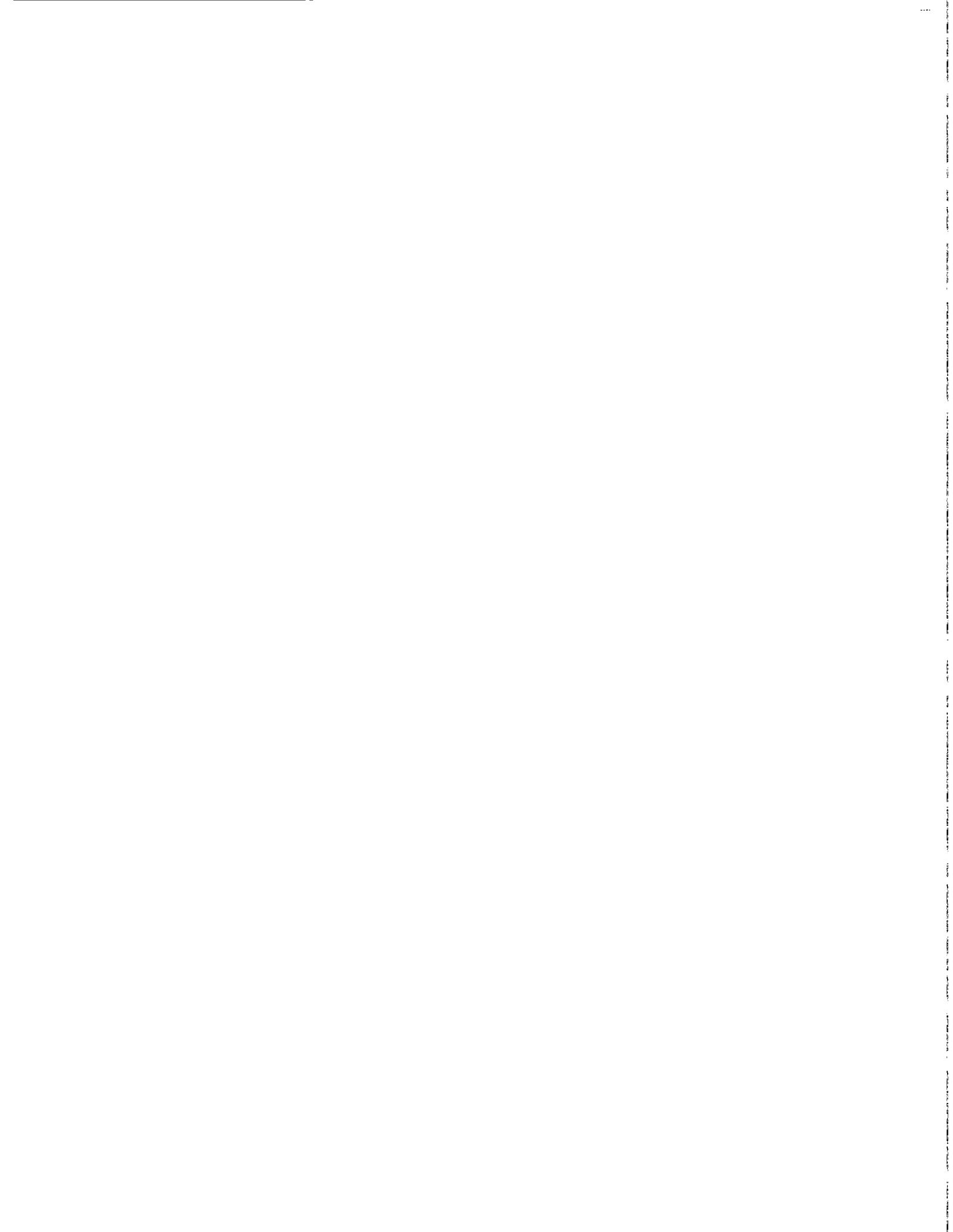
^dACDA has requested only \$14 million in fiscal year 1995 funds for the U.S. contribution to the Preparatory Commission/OPCW. The balance of funds due will need to come from ACDA's fiscal year 1994 appropriation or a possible supplemental request. However, if the Chemical Weapons Convention enters into force after January 1995, the OPCW's budget will be lower and a smaller U.S. contribution will be required.

^eFiscal year 1995 through 1999 figures assume no assistance is received from the Department of Commerce. With Commerce assistance, ACDA estimates its annual costs will total \$500,000.

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